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"Wherever there is love of mankind, there is love of the medical art."

—HIPPOCRATES.

PREFACE

THIS book is inspired by the belief that the most important knowledge for the individual is that which promotes his physical efficiency and happiness. The knowledge that has the power to contribute the most to these ends is that which helps him to preserve himself in the best state of health. Good health is the most important prerequisite for physical efficiency and happiness. Vicious heredity, ignorance, or lack of conformity to the known rules of hygiene, senile decay, and acquired diseases are conditions which militate against good health. All of these are susceptible of amelioration through medical knowledge and education.

This is the age of scientific methods. All of the knowledge which is important for man is in process of development by some branch of learning. The knowledge concerning human life belongs in the domain of the medical sciences, a department of the biologic sciences. The study of the physical properties of man is called medical for the reason that human interest in this study began in what was really a prescientific period, when curing the ills of man was the

first physical study applied to him. Seeking for means to alleviate his diseases, in the crude ages long passed, was the very natural beginning of this branch of biologic interest. Had mankind gone about this study in a truly scientific manner, anatomy, physiology, pathology, and hygiene would have been studied first, and then the treatment of diseases built upon these. But in the beginning of enlightened interest in human health scientific methods had not been adopted. An objection to the name, medical, is that it confuses those who are not familiar with scientific nomenclature. The meaning and mission of medical science is often misunderstood.

Medicine is the science devoted to the study of the biology of man; and since health is his best possession, medical science has as its special aim the investigation of those conditions which destroy his health, and the study of their causes, their prevention, and their treatment; and ultimately has for its end to promote his physical efficiency, to relieve pain, and to prolong life. All of these are being attained.

It is evident to the scientific mind that in medicine there can be no schools with fixed creeds, sects, systems, or short cuts to knowledge. There is but one medical science, and that is the science which seeks for the truth. Like all of the sciences, its progress must seem to the impatient to be slow, stumbling, and groping. But three thousand years of research and experience and two hundred and fifty years of

scientific methods have brought it to a high degree of perfection.

This branch of learning concerns deeply individuals and the public; but there is still much need of an awakening of the people and of the state to its sociologic significance. Society comes so closely in contact with the individual doctor on his mission of healing and relieving distresses both of a major and minor nature, that, regarding his work, beneficent as it is, as the typical activity of medical science, it has failed to look beyond and grasp the importance of medical knowledge and the medical profession as a whole, of which the individual practitioner is but an isolated, often imperfect, human expression. Moreover, the medical profession has failed to place sufficient confidence in the public, and has kept itself aloof, and denied the people important knowledge which could be of service to them. This medical aloofness has been prompted by the fear that a little knowledge might do more harm than good, and by the ethical desire not to be misunderstood or charged with self-exploitation.

It is hoped that this book may help to break down this barrier between the physician and the public, and interest the latter in the work of the former, and the former in the needs of the latter. The plea that goes out to the public from the great heart of the medical profession to-day is that prevention shall take the place of cure. Medical knowledge has

reached that point when much of it can be taken by the public and, without medical aid, applied to the end of preventing diseases. Again and again, medicine appeals to the people to take the measures necessary to stop typhoid, tuberculosis, yellow fever, plague, cholera, gonorrhea, syphilis, and the many other destructive diseases which are clearly preventable. The earnestness and practicability of this appeal constitute the most important side of medical sociology.

This book is made up of observations touching upon these sociologic relations of medicine. They are not of sufficient fullness to be dignified by the name of essays. All of them were written in the seclusion of the country, which must serve as the excuse for the meagerness of references. Some of them have already been published in the New York State Journal of Medicine at the time the author was editor of that journal; others are taken from his addresses, given before both medical and nonmedical audiences; and many are here published for the first time. There is for this reason little attempt at sequence or continuity of arrangement. Each chapter must be regarded as isolated.

The book has been divided into two parts: Part I including those chapters dealing with questions of greater interest to the lay reader, and Part II dealing with questions having special interest for the medical reader.

It is hoped that these observations may help laymen, students of sociology, teachers and parents to a better understanding of the meaning of medicine and its power to save; and that for the medical reader they may furnish some entertainment and instruction, strengthen his love for his profession, and awaken a fuller appreciation of its possibilities. Some of the chapters are little excursions across the borderlands of medicine, whither we journey all too little.

The words of Descartes, "If it be at all possible to ennoble mankind, it will be through medicine," can be understood to-day better than ever before; and it is the belief of the author that this twentieth century is to be characterized by a renewal of interest in health and physical efficiency such as the world has never known, because there is to be inspired in the individual greater concern for his own health and a philanthropic interest in the health of his brother men.

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PART I

THE SOCIOLOGY OF HEALTH

MEDICAL SOCIOLOGY

I

PUBLIC POLICY AND THE MEDICAL PROFESSION

THERE is one important fact which the public should understand, and that is that there is no great work in process of development which means more to the people than the advancement of the medical sciences. If society were wise it would render every aid to medical progress. A reflection upon the ability of the people to take care of themselves is the fact that most of the sanitary measures which have been adopted for their protection have been fought for by the medical profession against strong opposition. Medical men have labored to compel the adoption of laws for the prevention of diseases, without which laws our country would be riddled with pestilence.

Frequently, in this fight which medical sci-

ence is making for the people it loses, and some danger to public health is permitted to enter society. But ultimately, by the slow process of education, it is often made manifest to the public that a revision of its action is necessary, and it adopts the policy which medicine advised. This is done sometimes after the lesson has cost a great price. It is not appreciated sufficiently that there is a profession the function of which, as a whole, is for the public conservation. Individually, physicians often may be inspired by that beneficent self-interest which exists in all men; but as an organized class, what is recommended by the medical profession for the public good has the merit of true philanthropy which no other profession or avocation approaches. Medicine is not striving for the acceptance of any particular scheme, theory, or doctrine of social betterment; it is not laboring to fasten upon the people any particular superstition; its aim is to learn all that can be learned about the laws of health, and apply them to the end that pain may be lessened, sickness prevented, physical efficiency promoted, and death postponed. There are a few pessimistic philosophers, of the schools of Schopenhauer and Hartmann, who do not agree that all of these

are desirable things, but the majority of people desire them all.

Were society wise it would give the men who are striving for these things every help. Unwisely it does not. Here it makes laws to the prejudice of public health; there it hinders the adoption of policies for the saving of lives. In Vienna recently the mayor of the city made the public statement, in the presence of a smallpox epidemic, that more persons had died from the vaccinations than from the smallpox. Scientific men collected data, and showed the mayor that there was not a case of death or serious injury following the vaccinations, and that there had been deaths from smallpox; but the mayor declined to retract his words. The harm which the public often does itself through its chosen representatives is very great. If we go a little farther east, in India, we find 62,000,000 natives dead from starvation and plague, while the English Government sends the grain out of the country to pay for maintaining an enormous military and political show (emptying the wealth of the Ganges into the Thames) and fails to heed the plea of her humane medical profession, which would save suffering millions in this afflicted land. While the work of

the English medical men in India is most successful, still their protest always goes up that it is only palliative, and that they cannot secure governmental sanction or help for preventive work. Japan gave heed to medical counsel and saved her people.

If we return to our own country we find that in every municipality where typhoid fever exists, the medical profession has advised the people what to do to check the disease; usually it has pleaded with them. Has it advised the people wrongly? No. Has it been unduly sanguine that mortality could be reduced? No. Has the public ever accepted its recommendations without a vast deal of parley and delay while the people kept on dying? No. And is it not a spectacle to be viewed with pity and shame, that in every large community there are people dying who would be well and happy were the recommendations which the medical profession has placed in the hands of the people acted upon?

II

FEDERAL INTEREST IN THE HEALTH OF THE PEOPLE

"To be a good animal is the first requisite to success in life, and to be a nation of good animals is the first condition to national prosperity."—HERBERT SPENCER.

"The public health is the foundation on which reposes the happiness of the people and the power of a country. The care of the public health is the first duty of a statesman."—LORD BEACONSFIELD.

THE Cabinet of the President of the United States is made up of the Secretaries of State, of the Treasury, of War, of the Navy, of the Interior, of Commerce and Labor, and of Agriculture, an Attorney General and a Postmaster General. These gentlemen are at the heads of departments which have to do with the economics of government; but only remotely do any of them have to do with the very thing which concerns most closely the happiness, and therefore the prosperity, of the 80,000,000 of people whom they represent—their health. The health of our pigs has representation in the Cabinet, but not our chil-

dren. I shall not attempt to say what the title of the officer should be who presides over the department the business of which shall be to conserve the most vital interest of the people, but I shall say that such a department could be made the most useful and important of all the departments in the Government, and I except none. If there were a national department of health, or sanitation, with a secretary at its head, it could serve the nation to a degree of efficiency even greater than that with which our municipal departments of health serve our cities or the State departments of health serve our States. That there should be such a department is one of the most urgent needs of our country. The centralization of authority is essential for a great work.

At the present time there are private societies all over the land endeavoring as best they can to check the ravages of tuberculosis. Suppose the powers of the Government were turned in this direction: it is difficult to imagine the good that would result. Municipalities are struggling, each in its separate way, with the typhoid-fever problem. If only the Government would come to the aid of all of them with a systematized campaign against typhoid fever,

can one imagine the fullness of the beneficent results that would accrue?

If the solution of the problem lay in education, think of the facilities of the Government for advancing the cause of education and public information. The presses at Washington are busy turning out the effusions of Congressmen, and our mails distribute them broadcast over the land. Suppose these forces were employed in the campaign against tuberculosis instead of in the interest, say, of private corporations, might not the public money be spent to a better advantage?

There are now living in this country 8,000,000 people who are destined to die of tuberculosis: that is equivalent to all of the people in the State of New York. One hundred and seventy-five thousand people died last year in the United States from that cause. Tuberculosis is a preventable disease. The knowledge sufficient for its extermination is now in the literature of medicine. The State could take this knowledge without further medical assistance and consummate the work. The fight against tuberculosis should now be in the hands of the State. Medicine has gone about as far as it can. But in this fight the burden is still made to rest upon

the medical profession. The State is not putting its hand to the task. The man who has read history correctly knows that ultimately tuberculosis will be exterminated. How dearly we should prize the saving of some of those who are to be sacrificed upon the altar of delay. Suppose the Government should do its best to preserve some of these 8,000,000 people. Let us say that it saved only 1,000,000 and deferred for five years the period of incapacity of another million. The commercial value of that alone would pay all of the expenses of a national health department conducted upon a most elaborate plan.

During the coming year some 1,800,000 people are destined to die in the United States. The Government is spending money on the study of infusoria dredged from the bottom of the sea; it is doing all that it can for the protection of the trees and pigs; and it is devoting large sums of money to study and protect from diseases clams, lobsters, and shad—all of which is most commendable; but while the interests of these things are represented in the Cabinet of the President, our people may sicken and die of diseases which governmental authority might prevent, while the Government, whose

function it is to protect us, takes little cognizance of our plight. We need protection from disease more than from invading armies; and our infant children need protection more than our infant industries. What shall civilized peoples say of the government which concerns itself more with tuberculosis in cows than in men? In the United States of America a sheep with anthrax receives the attentions of a secretary of the Cabinet; but a whole community of men might have this disease, and there is no secretary to interest himself for them nor to preserve the well. There are scores of scientific men in this country of infinite capabilities, perhaps some who might do for us as much as Pasteur did for France. We could have their services at the rate of pay of a colonél of infantry. Does anyone believe that it would not be a good investment for the Government to encourage the study of human health and diseases?

According to our last statistics we may calculate that during the present year about one fortieth of our population will be constantly sick, which means that continuously 2,000,000 families, representing 10,000,000 persons, will be affected by sickness. What affairs of state are

more important to this one eighth of the population of the country? What are the many departments of the Government doing to reduce this morbidity?

The thing which is closest to the happiness and prosperity of the people has but meager consideration. The nearest we come to it is in the Public Health and Marine Hospital Service, a small medical department under the control of the Secretary of the Treasury—as though what is done for the public health must be associated with the dollar sign! Common sense and common humanity have prompted the Department of Agriculture to undertake much work of a distinctly medical character. The need and opportunities for such work are evident to all observing people. Curiously enough, the Department of Agriculture, according to the provisions of the Pure Food Bill, is called upon to pass judgment upon drugs, medicines, and foods intended only for human use.

Modern medicine, modern sanitation, has shown what it can do to reduce mortality and improve the health of communities. In its beneficent power the Government would have its most potent agent to promote and conserve the prosperity of the people. Most of the diseases with

which these 80,000,000 people suffer are subject to amelioration, and many of them are absolutely preventable. Yellow fever, tuberculosis, typhoid fever, malaria, and many other diseases are susceptible to the interpretations of interstate laws just as well as the railroads are. One State might reach a high degree of efficiency in dealing with them, but failure to do so on the part of neighboring States would negative its work. In one State it is forbidden to empty sewage into streams from which towns below take their water supply, but in the neighboring State sewage is emptied into these very same streams. Lake Champlain is protected from contamination on the New York side, but Vermont empties refuse into it. The question of the disposal of the sewage of the cities is becoming a serious problem. At present it is wasted. The cities are eating up the nitrogen of the country and dumping it into the sea. This will soon be recognized as a waste worthy of national attention. Streams flow, people travel, insects fly, and winds blow, carrying disease from one State into another; and these matters are too big and too vital for each community to try to settle for itself. Railroad cars are not the only things that may carry trouble

between the States. The milk consumed in New York City comes from at least six different States, all with different laws and different systems of inspection. The milk problem will never be solved satisfactorily until there is federal interest in the country's milk supply.

Each State might have a laboratory for cancer research, as New York State has, but a federal laboratory with the power of the Government behind it would have a greater efficiency. The several States have no relationship or channels of official connection with the countries which are carrying on scientific work, but the Federal Government has. The government which lends aid to foster the industries can afford surely to aid the advancement of medical science, the science preservative of its brawn and brain.

The people of this great country are going to have a national department of health. It may be deferred, but it is inevitable. The supervision of the foods produced and purveyed to the people, the healthfulness of trades and occupations, the cleanliness of the great waterways, child labor, the safeguarding of the young, the physical fitness of immigrants, the instruction of the people in the care of health, and the keep-

ing of vital statistics, are but a few of the governmental duties which are now neglected for want of a national department of health. Such a department should frame laws for regulating the practice of medicine, and recommend them for adoption to the different States.

The equalization of medical laws is much needed. The requirements for practice should be the same in every State. It should not be possible for a person who is debarred from practicing in one State to find that he can step over the line and practice in another.

This country is the most prodigal of all the great nations in its wastefulness of human lives by accident as well as by disease. As an example of what is going on in the direction of the unnecessary destruction of lives a recent report of Mr. Holmes, chief of the Technical Branch of the Department of the Interior, may be cited. He reports 23,000 lives lost in the United States through mine explosions during a period of less than eighteen years. These disasters, he says, are due to lack of proper regulations, ignorance, and carelessness. Last year 2,000 lives were needlessly sacrificed in our mines, and 10,000 lives were lost on our railroads. The total mortality from accidents

to wage-earners in the United States is 35,000 annually; the non-fatal accidents amount to about 200,0000.

It is a far cry from the Department of the Interior to the saving of human lives or public health. There is a great profession and a science devoted to the saving of human lives. Study of this subject has been in progress by this profession since the dawn of civilization, but the Department of the Interior has little or no relation to it. When we have a national department whose specific function is the preservation of life we shall be approaching the sensible solution of this question, and not until then.

We are deficient in national vital statistics. Without accurately compiled statistics many sanitary calculations become guesswork. The value of such statistics is of especial importance in determining the effects of diseases and other conditions upon the whole population. They furnish a judgment upon large numbers of people, while the best that knowledge otherwise could produce would be upon a few individuals. They also supply the measure of the vital phenomena of a population, the relation of birth rate to death rate, the prevalent diseases, their increase or diminution, their relation to

climates and industrial conditions, and many other invaluable helps in safeguarding the well-being of the people. Long before hygiene and sanitary science had attained to any considerable degree of perfection the value of such statistics was recognized. The several States of the Union are each devoting a certain amount of attention to this matter, but with indifferent coöperation with one another. Some of the States have applied admirable systems in this work, and others have done nothing. Other civilized countries have vital statistics. "In the United States the vital statistics are almost worthless," was said in a recent discussion before the Royal Statistical Society of England, and our statisticians know this to be true. A national department of health could remove this reproach.

European vital statistics show that in the middle of the sixteenth century the average length of human life was twenty years. It has increased, especially during the last fifty years, until it is now forty years. In Sweden, where modern scientific methods are applied most fully, it has risen to fifty-two years, and others of the more highly civilized European countries will soon reach that figure. It is surely of much

importance to a new-born babe whether his period of expectancy shall be twenty years or fifty-two. The frightful death rate from preventable diseases in the United States makes it absolutely feasible to add twelve years to the average length of life in this country by means of the simple measures which are already well known and proved. It is not too much to claim that in a hundred years human longevity could be raised to sixty years if the Government would make conserving the health of the people one of its functions.

Some day typhoid fever will be as obsolete in civilized communities as cholera or smallpox. We possess all of the information that is necessary to make it so now. It is no longer a great and elusive mystery. The average third-year medical student knows enough about typhoid fever to be able to stamp it out if he were endowed with absolute power. Of course, he would have to interfere with the profits of a number of our leading citizens. This is one reason why typhoid is prevalent. At present it is a matter of barter for human lives. It costs money to convince an influential citizen that the excrement of his tenants should not flow into a municipal water supply; and it is on

the border of the impossibilities to convince a corporation—for corporations, unlike individuals, it is understood have no souls.

If a municipality should grant to its health commissioner all of the authority necessary to this end, he could cut down the typhoid death rate to a minimum, but beyond a certain point he could not go without the aid of the State. He could provide water from the best source, and eliminate most of the avenues of contamination; and he could prohibit the admission of infected foods within his jurisdiction. But if a railroad corporation wished to build a road in another State across one of his water-supply tributary streams his municipal authority would cut but a poor figure in attempting to stop it.

All over the country railroads cross the streams from which towns take their drinking water, and every coach on every train of cars crossing these streams has a toilet which is used by typhoid convalescents. We possess positive knowledge concerning the railroads as distributors of typhoid. It was once the custom to speak of a certain amount of typhoid as the "normal percentage," but now it is known that the normal percentage of typhoid is zero.

Then there are a certain number of cases of typhoid which acquire their infection within the jurisdiction of some other municipality, so *no local health authority can stamp out typhoid unless all do,* or unless the Federal Government lends a hand. Moreover, we are learning that this disease very commonly is transmitted from person to person; nurses are particularly prone to contract the disease; and with the dangers inherent in the "typhoid carrier" we are familiar.

At a certain point the State must come to the aid of the municipality if typhoid is to be eradicated. And finally, federal supervision is as essential for the control of the disease in a nation as municipal supervision is for the control of the disease in a city. There is so much and such rapid transportation of people and of foods, and such an intermingling of the same, that typhoid fever cannot be eradicated by each city or State acting separately and without federal supervision: it is as though each ward in a great city were to attempt to solve its own typhoid problem without municipal control.

Every case of typhoid fever is an evidence of the benighted state of the civilization in which it occurs, and of the inefficiency of the

government. Typhoid fever has passed beyond the catalogue of diseases; it is a crime.

The wonder is that so much time has elapsed without this country awakening to the appreciation of the advantages of a central Department of Sanitation, presided over by a Sanitary General or Secretary of Public Health. Why has it not been done? The reasons are various. They are: lack of insistence on the part of the medical profession; lack of knowledge of the capabilities of medical science on the part of the public; and a prevalence of the general notion that the object and function of the doctor is to attempt to cure diseases with medicines more or less noxious, to deliver parturient women, and to perform the wonders of surgical legerdemain. When the statesman is confronted by a question involving the medical profession, there comes to his mind at once the representative of that profession hastening through the streets on one or another of these errands. This has given him a one-sided view of the meaning of medicine; and it is unfortunate that this one-sided view prevails in our legislative halls. Many of the men who draft our laws are of that class which most readily takes up with the therapeutic fads. The ig-

norance of the meaning and mission of medicine, displayed by our public servants in high places, is notorious and lamentable.

The remedy lies in education and concerted action on the part of scientific societies and organizations interested in social betterment. Then comes the drafting of a bill for either the organization of such a department, *de novo,* or the combining into a department of health of the several branches of the present government which now have to do more or less with matters of public health. And then we shall take our place in the world as a great, enlightened people.[1]

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[1] The above was published in the *New York State Journal of Medicine* in April, 1907. History has been making fast since then. Congress has provided a bureau of public health and an hygienic laboratory, President Roosevelt and President Taft have urged further attention to the necessity for legislation for public health, and both the Republican and Democratic parties, in their national platforms in 1908, declared for further public-health legislation. But none of these is adequate.

III

A PLEA FOR THE WELL

THE necessity for the family physician and the practitioner of medicine will continue indefinitely to exist. Even as the infective diseases become less and less, there will ever be human ills and accidents, not the least of which are birth and old age with their manifold symptoms. It is not difficult to believe, and surely it is reasonable to hope, that the practitioner of the future in his relation to the individual and the family will be of most service in preventing disease. It is earnestly to be wished that future medical education will give more attention to the study of the simple things now neglected—the general care of the health of the healthy individual. We have been so busy with diseases and the sick that we have neglected the well. The mother who seeks the best information as to what exercise her daughter, about to enter college, shall take, what sort of underclothes she shall wear, when she shall

bathe, how she shall ventilate her room, and what she shall eat and drink, will get little satisfaction because physicians are not agreed.

The questions of normal life are not yet sufficiently studied. For example, take the nursing babe. To make women give good milk is really more important than to make cows give good milk. Yet the research and the volumes of writing which have been devoted to cow's milk as a food for infants is utterly out of proportion to that which has been devoted to woman's milk. If the same amount of consideration had been given to making mothers supply good milk as has been given to making farmers supply good milk, the infant-feeding problem would be solved. A large amount of scientific study, laboratories, the microscope, the test tube, sanitary inspectors, the police, the Board of Aldermen, and the Legislature, all are invoked to improve the supply of cows' milk for sick babies; but how few of these potent agencies are invoked to the simple end that the natural mothers of these infants should supply them with milk! Might we not wisely give more consideration to the healthy babe before it becomes a sick babe? Are our infants the progeny of the cow that the *fons lactis naturalis* should

be so forgotten? If a mother does not give the milk the matter commonly is dismissed with regret, that "she cannot nurse her child." She may secure a large variety of ineffective advice, varying with the number of consultants whom she employs, but in the end she will not be able to nurse her babe—at least that is the fate of an enormous proportion of the native-born women in our cities. The only alternative is to "cast the bantling on the rocks, suckle him with the she-wolf's teat," if we may so designate the cold and impersonal extramaternal feeding of infants. This modern instance is cited somewhat at length as an example of the devotion of medicine to the art of fighting disease to the neglect of encouraging health, and to the study of pathology to the neglect of physiology. To use a homely expression, we are hell on fits. The doctor has met with wonderful success in the treatment of diseases; and I have no doubt, when he sets himself to the task, he will with equal success master the science of health.

Are coarse foods of value in preserving health? Is it true that "four hours of sleep before midnight are worth six after midnight"? Do we really eat too much, or is the cry but a bugaboo? Is fresh air so necessary for health

and conducive to longevity? Is the minimum of proteid food the optimum? Is hypermastication of value? Is a daily bath of hygienic virtue? Is it really beneficial to take a cold morning bath? Is exercise essential to perfect health? It is to such simple questions as these that we need to give a scientific answer, and place our knowledge of them on a sure footing. At present they are answered by some in the affirmative, by some in the negative. These are the questions which concern the well, not the sick; and I shall always insist that, of the two, the well man is of the greater importance and more entitled to the consideration of science.

If as much money and enterprise as have been bestowed upon hospitals were devoted to preventing the diseases which are treated in hospitals, the hospitals would be much less important figures than they are at present. Here lies a woman with her lower abdomen full of pus, intestines matted together, an operation scheduled for to-morrow morning, and eternal invalidism for the rest of her life. A pamphlet on venereal disease costing less than twenty-five cents in the hands of her husband at the proper time, or the proper instruction from a respected source, would have saved all of this.

Let not the cynic scoff and say pamphlets and education have been tried and found wanting. Maybe his pamphlets and his education have. But so sure as man is human, just so sure is it true that if there is any information that will save him misery and pain and loss of love and money, that information he wants and will cleave to until death, and if he does not act upon it it is because he has it not. Much information is given but not received, heard but not heeded, in which case it is not information at all. It is not so much that we should strive to have more skill in letting out pus as in preventing suppuration. The Society of Prophylaxis has more claim to public esteem than the Surgical and Gynecological Society, admirable and valuable as it is. A great man once said that were he omnipotent he would make health, instead of disease, contagious. That omnipotence is coming into the hands of the physician now.

Surgery has perfected the operations for bunions, ingrowing toe nails, and hammer toe, but what scientific interest is given to the question of shoes for healthy men? That is the more important matter. The army has studied it, but outside of this men are the slaves of

foot-disfiguring fashion, and the field for exercising surgical skill upon the distortions induced in well men's feet is very large. The treatment of colds keeps the doctor busy through the winter months. If the money and energy expended in compounding, say, simply those cough mixtures which do more harm than good, were devoted to the scientific study and teaching of the cause and prevention of colds the well man would then receive his due.

We say that scientific attention is given to the matter of ventilation of schoolrooms in our new school buildings by the engineers who construct them. Theoretically that is true, but as a practical fact they are poorly ventilated. Well children go into these rooms and come out with headaches, adenoids, and colds—the products of imperfect ventilation. The ventilation problem is worked out on paper, but it does not stand the clinical test. What would we think of a medical treatment being applied to the sick which was such a farce as this?

The medical profession has been instrumental in inaugurating a great system of tuberculosis education by means of public lectures, pamphlets, and exhibits. The city dwellers have been most in need of these, and they have

been of infinitely greater value to the well than to the sick. But this is only the first step in the campaign against tuberculosis. Knowledge becomes sterile if it cannot be applied, and how can the crowded tenement dwellers of the great cities take advantage of this knowledge? How can a balcony be slept upon if there is no balcony? How can windows be opened if there are no windows? Medicine has started this campaign for the saving of the well; the State must take it up and continue it, but we know that its ultimate solution is an economic one. When one sixth of the families in one neighborhood in New York City live each in a single room, and one third of the families live in two rooms—many of which are dark and squalid—when these miserable quarters cost the occupants for rent one third of the wages earned by the men of the families, when these people cannot buy food and fuel economically because they must be bought in very small quantities, then the plea that we make for the well must be also upon an economic basis. It is to this end that our campaign of education must be directed.

Human health must be regarded as of too great value for the community to permit a

landlord to wring out of his tenants for rents twelve per cent on his investment. Coal bought by the pailful, because there are no facilities for storing it, costs from twenty-one to twenty-eight dollars a ton. We have laws against usurious charges for money, but none for usurious charges for tenement houses. Is money so much more precious and worthy of protection than human lives? It is this usurious advantage which can be taken of the poor and ignorant that makes the protection of the well difficult in the crowded cities. The cities are practicing wastefulness in allowing their inhabitants to be rented unhygienic dwellings. Model tenements are an economic necessity.

No plea for the well is complete unless it calls attention to these economic needs which affect the health of the people. In the first place the whole responsibility for the child should not rest upon the parents alone. The coming into the world of a child is of more importance to the State than is the advent of an immigrant, a criminal, or a lunatic, yet the State gives its serious attention to the last three but leaves the child to the mercy of its parents, who may be ignorant and vicious. These things should ultimately receive the attention of the State:

the physically and mentally unfit shall not breed children; and children shall be born directly into the custody of society, and society shall demand that they receive the attentions necessary to make them healthy and helpful. If the parents cannot or do not provide for them the State shall. If it does not do this it should not have allowed them to be conceived. The most important things for the community to take care of are not the trees or the animals in the park but the human beings. If we find a tree in a public park affected by some disease the people know where to place the responsibility: it rests upon some one whom they appointed; but a little child may grow straight or crooked, it is at the mercy of parents—they are self-appointed custodians. Whether it is by a pension for mothers, or by an insured stipend for the child, or by State supervision, the responsibility for maintaining the child in health must some day be taken hold of by the people.

Diseases and bad conditions will continue to incapacitate the healthy until the well man receives the consideration which his importance and value to the community merits. Some day we shall have scientific studies of human health. Papers before societies on these subjects will

be common. Every medical school will teach hygiene (not merely have a nominal chair), and the study of health will be regarded as of greater value than the study of disease. This most important scientific field yet remains undeveloped. Biologists are needed to study man to the utmost possibilities of human knowledge.

It was once the custom, in a time of medical unenlightenment, for the sick man to ask the advice of some wise layman, but now he seeks the physician. It is now the custom in matters of personal hygiene to take counsel with some layman who exemplifies good hygiene, but the day draws near when medical men will be authorities on health as well as on disease. Just in proportion as the medical profession becomes proficient and learned in the art of maintaining health, in just that proportion will be increased its power as a force in the public life. The State, the people as a whole, demand increase of individual efficiency. And the medical profession has it in its power, to a greater degree than any other class of men, to help toward that very thing—increase of the efficiency of the individual. He who preserves the strong is remembered when he who saves the weak is forgotten. Those who are looked to only in time

of trouble—the old-time doctor, the money lender, the insurance company, the priest, the undertaker—all may be respected, but they are not honored by strong and virile and independent men. The weaker side of the body politic honors them, but public opinion is the opinion of the strong. When the medical profession becomes the champion of the strong man, of the growing youth, and of the lusty babe, as well as it has for countless generations been the champion of the sick and the distressed and the puny, then shall it conduct humanity to victories yet undreamed, then shall the physician be not only helper but he shall be leader also.

IV

SOME MEDICAL ASPECTS OF CIVILIZATION

I SHALL not attempt to define civilization —it is a rather elusive state—but I shall insist that it implies betterment of personal and social conditions. It must make for happiness, it should help men, or it is not civilization. We must beware of the disposition to regard peoples whose manners and customs are different from our own as being not so civilized as we. These very people may have as good cause to judge us likewise. Civilization is to the community what culture is to the individual, and since society is an aggregation of persons it all reduces itself to a matter of the individual.

There is an injustice done this expression in that we are prone to regard as the attributes of civilization the things to which we are accustomed. In other words, we think that *we* are the civilized people, whoever we are. A man who has been living in the woods with the In-

dians looks at his moccasins and says: "Well, I shall be glad to get back to Broadway and into a pair of civilized shoes." By that he means exchanging the comfortable moccasins for a pair of sharp-pointed, stiff patent-leather, foot-deforming shoes which require to be "broken in." The London girl whom circumstances marooned among the Swiss mountains and clothed in short skirts and a loose bodice, exclaims "I shall be glad to get back home and into civilized clothes again." She means—go up to London and see for yourself!

We expect these things; civilization hangs on the edge of savagery. The fact that a society cultivates many of the civilizing virtues hardly justifies it in designating all of its attributes as the qualities of civilization. It happens that the majority stand behind much of the savagery and declare that it shall have the name of civilization. This is true of the Broadway shoe and of the London corset. Civilization in the popular acceptance is much a matter of custom rather than of good, of tradition and superstition rather than of knowledge and culture. It is illustrated by the mob which destroyed the library and apparatus of Joseph Priestly, by the murder of Michael Servetus,

and by the little threatening band which waited outside of McDowell's house while he performed the first removal of an abdominal tumor.

An independent citizen of Washington with a good head of healthy hair wears no hat, and he is hooted by the bald-headed, derby-crowned scions of Washington civilization as he passes to and from his daily work. I know a woman who might have a so-called "luxuriant head of hair," but she keeps it cut off at a level with the lower angle of her shoulder blades. That gives her an abundance for coiffure purposes, to pin her hat to, and to look well. Still, in the civilization in which she lives, women take pride in carrying about with them as much as possible of this particular excretion. Some carry two or three pounds of it on their heads—weighing almost as much as their livers. If a woman can sit on her hair she is proud of it. The more there is of this mass of stuff the more time it requires for its care. It should give about as much satisfaction to have an unwieldy mass of hair as it should to have long and unwieldy finger nails. It is a part of the agreed-upon concomitants of civilization. Pekin is not far from New York.

Now let us come a little closer home to the medical profession. There lies before me a medical book by an eminent obstetrician in which I read that "the rapid pace of modern life is more and more rendering the nursing of infants distasteful and even annoying to many mothers, and this is especially so as we *ascend the scale of social life.*" Again, "The advancements of civilization, especially in our cities and among cultivated people, are rendering child bearing more and more difficult and depriving the infant of maternal interest." These statements are grossly and horribly false. It is true that "the rapid pace of modern life is more and more rendering the nursing of infants distasteful and even annoying to many mothers," but that "this is especially so as we ascend the scale of social life" I say, a thousand times, No! Our books on obstetrics and gynecology pass this error along. I wish they would not. The mother who does not love her babe has not ascended the social scale. The women who represent the real civilization, who can justly be said to be high in the social life, are they who keep their bodies in health, who conceive in joy, and who bring forth in glad expectancy their offspring to be cherished and

nourished and guided by mother love. Our writers have confused civilization with bridge parties, earrings, high heels, the theater, and feminine fluffiness. Let medical literature at least cease from this error. A group of females bemoaning pregnancy as an "accident" are not even mounted on the social scale. The pug-dog companionship, fingers encrusted with jewels, idleness and ennui are not the signs of cultivation.

Civilization and social advancement are making women more healthful, more moral, more happy, more interested in the important things of life; and more useful; if they are not doing this they shall not have that name. They are bringing the pregnant woman out of her "nursery wrapper" and brooding seclusion, and giving her her wonted exercise and open air and healthful occupation. The pregnant woman who fills her soul with fear and secludes herself as an invalid becomes an invalid, but in so doing she is not displaying the attributes of an advancing civilization.

A few years ago when it was fashionable to be pale and languid a lady from Chicago, as she tied two thicknesses of veils over her face before stepping into the carriage for a drive,

said to her weather-browned hostess: "If you went in society you would have to take care of your complexion, too!" Here are "society" and the "social scale" again; but the weather-browned woman, who had cast out the artificial from her life, was the higher of the two in this much talked-of "social scale."

On one of those rare days in the early part of April, when the air is clear and the sun is making the old earth warm again, when nature proclaims the end of winter's slumber, and the buds are swelling with awakening life—on one of those great resurrection days, I saw two women, arrayed with short skirts and stout shoes, set off for the woods with their children, to rejoice in the discoveries of the first signs of life at the glad festival of the awakening of the living things. On that same bright day, I looked into a gorgeous parlor. The shades were drawn to exclude the light of day; artificial illumination threw its pallid pall upon the scene; the air was close and pregnant with infinite migraine possibilities; at a score of tables sat fourscore of women, magnificent beyond description; their children were in the care of the nurse at home; the bowels of the earth had yielded up the brightest gems to

adorn their throats and fingers; precious pearls, filched from the voiceless oyster, nestled as though at home against their shell-like ears or hung like tears of protest from the holes that defiled their fair lobes; some displayed the purchased blush for health that concealed the pallid cheek; the richest fabrics of the loom lent to the eye the dazzle of their color and to the ear the faint rustle of their richness; fourscore of heads were crowned with wondrous and bizarre productions of milliners' ingenuity, made still more glorious by resplendent plumage plucked from the warm bodies of birds of paradise; the air was hushed; this awe-inspiring sight, I was informed, was "bridge"; and I marveled and wondered if I were now beholding the veritable *pons* over which sages for all ages had cudgeled their dull asses. Then my mind turned to the two women out under the blue sky, pressing the soft, warm earth beneath their feet, breathing in the precious air of heaven, rejoicing in the miracles of the springtime, with merry children eager to read the great message written in nature's missal—and I knew the race of man was saved.

Let us place the right values on things so

that our literature may stand the scrutiny of time. Let us not accept false estimates from the hands of society. Whatever pertains to the health of people is within the jurisdiction of the medical profession, and it is our duty to reconcile with the advancements of civilization whatever makes for healthfulness.

It also is our bounden duty to declare as uncivilized and uncivilizing the influences which make women less useful and less loving and lovable as mothers and wives.

V

HEALTHFULNESS AND HAPPINESS

I HAVE recently had a friend make the statement that he would rather be happy than healthy—this in connection with the harm that tobacco was doing him. He preferred to suffer the physical ills entailed by tobacco than to sacrifice the pleasure of the fragrant plant. That is his affair. It is a terse way of saying that it is better to do what one wants to do without considering its healthfulness or unhealthfulness than it is to do disagreeable things for health's sake. This is a perfectly reasonable view. One generally does what he wants to, and that is usually the most sensible thing to do. That is a man's birthright as soon as he is strong enough to enter into the inheritance of his own and take possession. As a child he has to do what some one else thinks he should do — what some one else thinks is good for *his* health or for *their* happiness. But when his ego has grown strong there comes into

play *der Einzige und sein Eigentum.* Then, too, there is a disposition to take the gambler's chance. One often violates a law of health hoping that the retribution may not be forthcoming. Sometimes it is not, and he becomes emboldened and takes a chance again.

Shall I take a cold bath on a winter's morning or not? Shall I walk to the office or ride? Shall I decline to take a couple of drinks with a convivial friend? Shall I be healthy or shall I be happy? These are the questions often asked. And one naturally decides for happiness, for it is that for which we live. The object of life is happiness, not health. We are not living for the sake of growing healthy, we are living with happiness in view. The man who makes healthfulness his aim in life might be a fine specimen of a brute, but he would be a pretty poor sort of a man. But just here comes the duty of medicine to humanity; that duty is to make the incentive to happiness and healthfulness grow toward each other until finally they come together and coalesce. Then we shall find happiness in doing what is healthful, and health in happiness.

This consummation is in process of evolution. One does not go to breakfast without having

brushed his teeth, although it is a time-consuming and, in itself, in no wise a pleasurable task. We also bathe and keep our bodies clean. Our ancestors a few generations ago gave little heed to either of these operations. Knowledge of their value to us as individuals makes us perform with happiness tasks which otherwise would be disagreeable. The beautiful men and women of the age of chivalry, of whom the poets have sung so wonderfully, were notoriously dirty as to their bodies, although classic art has belied them sweet and clean. Cleanliness in Christendom is a recent conception. The influence of medical science upon human progress is destined to bring into the circle of happiness all those things which make for health, for health is one of the most important prerequisites of happiness.

This is just the process which is going on with regard to morality, and has reached a high state of development among the most cultivated people. The old question used to be, Shall I be good or happy? If I am good I shall miss lots of fun. Education has brought morality and happiness so close together that now they touch. The foundation stones of happiness are hewn in the quarry of morality. Happiness is

comparatively little sought for in immorality. Wise men have learned that the best happiness must be consistent with morality. Of course the consummation is not yet quite completed; that would mean, I think, what is called the millennium.

This development of healthful happiness must go hand in hand with moral happiness. Morals do not thrive well in unhealthy bodies. Solomon and David are horrible examples of retributive morality. The compulsory morality of old men, who are the wrecks of youthful sinners, is not the real thing, although, of course, better than nothing. A man in jail cannot steal, nor can a sexual wreck be a roaring libertine. Desirable morality is of the healthy and vigorous type. The same is true of happiness. Healthful happiness—it is that toward which medical science is directed. We are aiming toward the state of enlightenment in which, if the walk to the office is the more healthful it will be preferred to the ride, in which the harmful tipple will be declined with pleasure, and in which my friend will value his health more than his pipe. Harmless pleasures will take the place of harmful ones, and health and happiness will go hand in hand.

VI

EXERCISE AND HEALTH

AN Eastern potentate of great age and vigorous health, who sat watching some Englishmen playing polo, asked if the young men were really so poor that they could not hire people to do that for them. A modern philosopher has observed that work is work if you are paid to do it; it is play if you pay to be allowed to do it.

There is much confusion between strength which can be measured by foot pounds and strength which means vitality and can be measured in resisting disease. The athletic exhibit in the physical culture advertisement whose back looks like a corduroy road, and the plain citizen who prefers arguing with a burglar to tossing him through the window, and who is never sick till he turns seventy, are two very different exhibits of strength. Good health should be the criterion. That is what we are seeking—not lifting power.

All men are constituted differently so far as

exercise is concerned. For health's sake a man should take as much exercise as he needs. Most of us need exercise. It is an hereditary necessity. Our organism is constituted for exercise, and we must have it or suffer a certain degree of unbalancing of our system. This is necessary for the reason that our ancestors for hundreds and thousands of years took exercise. Their vocations were acts of toil and manual labor. Hunting food, fighting off enemies, tilling land, and building houses are the functions for the performance of which we have inherited muscles. Our good health demands that we shall to a certain degree live up to our intentions. It is only since the conditions which make for inequality in social standing have appeared that a part of the community labors and another part is exempted from labor. Much of our so-called education is patronized with the view of securing exemption from labor. Our public-school system is defective in this quality: it too often inspires youth with the ambition to escape work. If a man is uneducated he must labor; if he is educated he may earn his livelihood manipulating the products of the labor of others. These things will be adjudicated by and by.

The older civilizations in fertile countries, where food has been abundant and where prosperity has followed trade, have gradually eliminated in many instances the necessity for exercise of the bone-moving muscles. We of the Western world are yet too near the soil to do this. Most of us need not go back more than a generation or two to find our ancestors delving with bone and sinew. What is true of the race is true of the individual. It is not good for the health of the brawny blacksmith to quit his anvil and turn bookkeeper. Nor can the children of the toiling lineage live in muscular idleness. Each requires exercise in some sort akin to his hereditary wont. His best physical health demands it.

But lack of exercise is not the only change made by the man who becomes sufficiently cultured to be able to escape physical labor. He also exchanges the free and open air of his ancestors for the confinement of the office, and he adds the stress and strain of *mental competition* for livelihood which his ancestors knew not, at least as a necessity, but only incidentally as a pastime. Thus the man who labors not with his hands, if he would follow the tendencies of his race or family, which must have

been salutary because they have produced him, needs exercise, free and open air, and relief from the stress of mental competition. These three things he needs, and he is not wise unless he gives himself the advantage of them regularly and systematically. Unless he does, his family line must pay the penalty, and end with him or with his emasculated offspring.

The city is a trap in which is caught the eagle who has soared the air and dwelt amid the mountain cliffs for countless generations. The free expanse of earth and sky have been his and his fathers. Now he is caged—a mighty specimen. Call him "magnate" or "Napoleon of finance" or "clerk," or what you will, he has in his blood the impetus of a thousand generations and the memories of the free air and sky to give him strength; but keep him caged in the city, and his breedings will be but barnyard fowl, which will perish and melt away.

The Anglo-Saxon business man or professional man needs not only some exercise, but he needs it in the open air. I am not sure but that the latter is even more important than the former. It is quite true that much of the benefit attributed to exercise belongs to fresh air and forgetfulness of mental competition and

business cares. A day's target shooting, lying on the ground, gives results apparently as good as a day at golf. And of all the miserable makeshifts of exercise bowling is the worst, when practiced, as it usually is, in an illy ventilated basement in artificial light and dust and smoke.

This whole matter of exercise and recreation requires orientation. It needs to receive scientific study, and to be presented to the people as a part of their education. Witness the unwholesome struggles for recreation and exercise indulged in by the hordes flocking to the summer amusement places. How deficient in education upon this important subject is this sweating, peanut-eating, gewgaw-bespangled, beer-consuming throng. The poor man, like the rich man, too often prizes his recreation according to the cost. The sport which costs money is the thing.

I should like to see the rich's man recreations turned to greater usefulness. There are useful recreations which give as good exercise as the nonproductive exercises. A man who plays eighteen holes of golf—even though he indulge in no stronger expletives than "Tush, tush!"—has used enough energy, if turned into useful

channels, to cultivate, say, an acre of potatoes or to split enough wood to keep a single family warm for a month in winter. These are practical and useful employments. To say that a man has taken enough exercise if converted into foot pounds to raise himself 5,000 feet is scientific, but a man does not want to be raised 5,000 feet. But we do need potatoes and fire wood for the winter. Trimming shrubbery, laying walls, mowing grass, digging ditches, making roads, hoeing in the garden, planting seeds, cutting weeds, planting trees are as good exercise as golf; and all are useful. I am familiar with the satisfaction in winning a close set of tennis; I know the joy in golf in getting off the long, low drive that goes and keeps on going and contributes to the beating of the bogey; I know the calm contentment in making bull's-eyes at a thousand yards; I love the exhilaration of a dash in the saddle through the still woods or across the plains; I know the joy of holding the tiller to a spanking breeze—but all these are lacking in that quality which craves results—real results, results that help more than the doer alone. And as I contemplate the efforts which accomplished nothing but pleasure for me alone, as I think of the

rides that carried nothing and ended but in turning back to the place whence I came, and then as I contemplate the multitudes of human needs which might be supplied by healthful activities, those who want and to whom the things needed might be carried, the barren fields waiting for the hand to cultivate them, the desolate places crying to be cleansed, all of the faults that can be remedied only by the willing hand and strong arm, I am convinced that a waste of muscular energy is as prodigal as a waste of mental energy or of money. When the golf and the tennis, the saddle and the tiller, are forgotten I shall cherish the memory of the real sport in soil turned by the plow, stone fences laid, new land cleared, red apples carried to the market, snow shoveled, wood chopped, and sweet hay stored in the mow.

The man who can afford to engage in unproductive exercise finds joy in the human weakness of prodigality. The spendthrift who lights his cigarette with a twenty-dollar bill has a similar pleasure to that which he finds in knocking a rubber ball around a field, consuming time, material, and energy with nothing to show for it; the great majority of mankind cannot afford to do it. What we much need is the

competitive spirit and the spirit of joy and play introduced to a greater degree in productive work. It is done to a certain degree; it can be done more.

There are sociologists who contend that there is not enough work for those who need it and who must have it in order to live, and they would stay the hand of the rich man from work. This is false doctrine. They have sought for reasons in the wrong place. The whole out-of-doors is crying for the hand of man to cleanse it and to mold it into shapes more useful and beautiful. And so long as there are hungry people and uncultivated fields, so long as there are empty wood-boxes and unchopped wood, so long as there are unsupplied wants, there is work to be done. The man who pours a good can of milk into the sewer should be touched by the same compunctions of prodigality as the unproductive youth who pours a day of good energy into the game of golf.

I would not discourage the joy of play among children, nor play with them and for them; nor would I deny such play to the man who works with his brain and cannot secure access to productive recreation; nor to the man who works with both head and hand indoors and out if he

finds joy and help in the relaxation of play; nor would I discourage altogether the athletic sports that encourage health and interest in strong and supple bodies. This is play which is as productive as restful repose is. But I return to the proposition that for most of this play useful outdoor work could be substituted. The play is necessary because of failure to engage in such work. The best kind of labor is useful labor, and the best kind of play is useful play. Such labor becomes play if entered into in the right spirit. Let us turn our faces toward the day when we shall have more of useful recreation, and more of joyous and health-giving work.

VII

THE ALCOHOL QUESTION

THE alcohol question has been approached and discussed on nearly all of its sides. Ancient and ignorant people used alcohol because they liked the effect of it, and did not bother to discuss it. Later it was used in religious rites, and for some two thousand years it has always had defenders who took the ground that the Creator would not have made it and given His children an appetite for it unless it were good.

Then came the awakening. It was observed that no agent was contributing so much to the increase of poverty, crime, and destitution as alcohol. It was the agent that was filling the almshouses and prisons. Statistics were compiled, and the evidence against alcohol was incontrovertible. In the meantime the great temperance movement sprang up. No crusade ever had greater righteousness behind it or more earnest men and women enlisted in its cause.

The facts which they had at hand, together with the earnestness of the advocates, were sufficient to overwhelm every opposition. Still the results which this great movement has secured, compared with what it has merited, have been but paltry. Two reasons have contributed to this failure. The first is that the temperance advocates quite invariably "slopped over." They were not satisfied with the simple truth alone. It was all they needed, and it was more than sufficient to prove their case. But still they have ever indulged in exaggerations and misstatements. I rarely have heard an honest man advocate the cause of temperance from the rostrum. His argument usually has presented the great fundamental truths of his cause, and then interspersed them with so much that was false that, to the eyes of the discerning, the whole was but a pretty piece of dramatic acting. Thus the great cause of temperance has been sacrificed to oratory, and to the unfortunate practice of not treating one's auditors honestly and regarding them as intelligent beings to whom the truth, and that alone, may be told. This dishonesty has been carried further than the rostrum. The innocent and undiscerning child, who above all should have

its credulity met with honesty and truth, has been made the dupe of these practices. They have been responsible for having written into text-books on physiology, which were introduced into the public schools, a chapter on the effects of alcohol so grossly absurd as to be a travesty. The cause of temperance has been damaged by such methods. The truth is sufficient. The more recent text-books, through the influence of the Women's Christian Temperance Union—an organization which has done great good in furthering the propaganda against alcoholism—have corrected these early errors, and we now have many fair and truthful expositions of the effects of alcohol.

The second reason why the cause of temperance has not prospered better is because of the innate liking on the part of a large portion of the population for the effects of alcoholic beverages. The debauchee who has been reformed by hysterical demonstrations is not prone to stay reformed. He has the constitutional craving, and I doubt if our statistics on the subject of reformations are worth very much.

But alcoholism is not altogether an unmitigated evil. It is an evidence of a somatic weakness or degeneracy. The normal individual de-

stroys himself neither with alcohol, tobacco, or sexual excesses. The confirmed drunkard serves humanity by destroying his virility to such a degree that he does not propagate his kind, and if alcohol is the agent to shunt off the degenerate's line of genealogical progression into the *cul-de-sac* of oblivion I am not sure but that it has served the human race a good turn. On the other hand it is always possible that the touch of instability which leads to drunkenness may, through the agency of a normal mating, propagate offspring through whom the paternal weakness may be made to disappear. Happily, this is often the case; and it is, indeed, better that a man should be in a line of progressive improvement than in the line of a decadent family. It is a bad sign when a man given to alcoholic excesses boasts that his father was a moderate drinker, and that his grandfather drank not at all. It augurs better for the family when a man can say that his grandfather often drank too much, that his father was a moderate drinker, that he drinks but rarely, and hopes his sons will not drink at all.

It may with some justice be said that no nation becomes thoroughly sober until it has been

thoroughly drunk, that alcohol alone insures an immunity against alcoholism; and the ravages of alcohol among nations which have never before had it, as our American Indians, and the absence of drunkenness among the South European countries which long ago have passed through the stage of intoxication, may be pointed to as proofs of this proposition. Our knowledge of the principles of evolution and of immunity teaches us that there is much truth in this; but is it best to secure immunity through this channel? The answer is no. This may be further illustrated. Let syphilis strike a people whose ancestry is free from syphilis, and its ravages are most horrible. The nations which suffer the least from syphilis are the nations which have been most thoroughly syphilized. Yet, what people would invite syphilis to bestow upon them such immunity? No longer do we go on the assumption that children must have the exanthematous diseases; we try to protect them from them. It is an immunity bought at too dear a price.

This question of alcohol and alcoholism has passed through all of these phases of discussion, and finally it has come to the last stage; science and common sense have taken hold of it,

and here the curse of rum is to meet its defeat. During the last ten years patient and honest men seeking after the truth have investigated with scientific accuracy the effects of alcohol upon the animal organism. A large amount of data has been compiled. Many old theories have been disproven; many have been confirmed. But we now have the effects of alcohol upon a scientific basis. Its effects upon the vital resistance, upon the phagocytic power of leucocytes, upon heat production, digestion, the heart's action, blood pressure, and upon the nerve centers, have all been carefully studied by many observers, who have arrived at practically the same conclusions.

Alcohol is a poison and an irritant, although capable of combustion to a certain degree. But this does not make it a food; most of the poisons are capable of combustion in the body; they are disintegrated, assimilated, and oxidized. Its usefulness in the internal treatment of diseases is very limited. As an antiseptic its value is but small. When taken into the normal human body its effect is harmful, causing a decrease of both muscular and mental efficiency in direct ratio to the amount ingested. To say that alcohol gives a man courage to face

dangers is as inconsistent as to say that morphine gives him courage to face pain. Alcohol paralyzes the centers of volition and the other higher attributes; but first, and for a brief period, it stimulates before it paralyzes. Its reputation for giving strength and courage belongs to this short initial stage.

Medicine has learned much of alcohol in recent years, but has not given the public the benefit of the knowledge. Physicians have steadily diminished the amount of alcohol used in the hospitals until it has become almost obsolete as an internal remedy, but still the public has continued to judge the medical profession's attitude toward alcohol by the copious prescribing of it in the past and by what it sees of the doctor's habits at his club and at the banquet table. So far as the public knows alcohol is still approved by the medical profession. It is time to set the public straight in this matter, and if we have not agreed to cast it out entirely much good would come if the public could know that it is now but comparatively little used as a medicine. The practical layman will understand the meaning of the fact when we tell him that in the last twenty-five years the medical use of alcohol has decreased more than

seventy-five per cent. A remedy which is being eliminated at this rate is approaching its end.

If there is any etiological relationship with the certainty of which we are familiar, it is that between alcoholism and epilepsy. We have as good evidence of this as we have of the causative relation subsisting between the bacillus typhosus and typhoid fever. The epilepsy of alcoholism presents itself in many phases. The drinker himself becomes an epileptic, but the most important consideration is the relation of drinking on the part of the parent to epilepsy in the child. The epileptic colonies are witnesses to the saying of Euripides, that "the gods visit the sins of the fathers upon the children." All observers of epilepsy report upon alcoholism as a prominent cause of this disease, but there is a large class of cases which, according to our biological theories, would seem almost outside of the influence of heredity. These cases are so commonly observed that they represent a distinct and important contribution to the study of heredity. They are the occurrence of epilepsy in offspring conceived while a parent was under the temporary influence of alcohol, while offspring

born before and after which were conceived while the parent was not using alcohol were free from the disease. The histories of epileptics show many cases which can be traced to single instances of transgression in the use of intoxicants. Matthew Woods reports the case of a young imbecile girl who was conceived at a time when the father was under the influence of alcohol; four children born before this period and two born subsequent to it being perfectly well. In Caucasus, where wine is very cheap and much used instead of water to quench thirst, the proportion of epileptics is unusually large. Bourneville, of France, observed 2,554 children who were admitted to the Bicêtre and Fontain Vallee, 2,072 boys and 482 girls, all suffering with idiocy, imbecility, epilepsy, and other neuroses. He found that 1,053 of them were the offspring of drunken parents. Some of these cases are striking commentaries upon the law of compensation—industry and the frugal life yielding healthy offspring and opulence yielding epileptics. Woods refers to the case of a man who scarcely knew the taste of liquor, and who became the father of four healthy children. Then he became prosperous and famous, organized a wine cellar and be-

came a *bon vivant.* Two more children were born, both of whom developed epilepsy.

While medical men are familiar with this etiological relationship the public is not; and it behooves medicine to exert every influence that the public shall understand this much of the etiology of epilepsy, and know that so much of it at least is not an undiscovered mystery.

Another important social relationship of alcohol is that of sexual immorality and the venereal diseases. By paralyzing the higher moral centers and irritating the sexual centers it becomes a most potent agent for sexual harm. Alcohol and sexual vice go together.

The fact that in some of our American colleges the students are encouraged in the use of beer and the conviviality which it engenders can only be taken as an evidence of the benighted state of the education in these institutions. The idea was to emulate the practices of the German universities, forgetful of the fact that the latter educate for special work men whose habits are formed, while our colleges are endeavoring to train immature youth in the rudiments of education with which the German university student has long since finished. For

an educational institution to encourage youth in the use of alcoholic drinks, or even to countenance their use without protest, is to commit a sin.

A matter upon which the public needs information is concerning the effects of alcohol drinking upon the upper air passages. It has long been believed that alcohol is a stimulant, and that in moderation (if there is such a thing) its harmful effect upon the mucous membranes is confined to the abdominal organs. Recent studies, showing that alcohol is locally corrosive and generally narcotic, seem to be well founded, but that the effects of alcohol goes further than this and influences mucous membranes remote from its place of absorption has attracted but little attention.

Students of this subject say that it is exceptional to find persons who use spirits that do not suffer from catarrh and subacute inflammations of the throat and nose. They report that the paralysis of the capillaries caused by repeated doses of alcohol becomes a permanent condition, and find this especially in the respiratory mucous membranes. We are familiar with the dilated capillaries of the spirit drinker's face. This is a duplication of what takes

place also in the mucous membrane of the nose and throat.

The voices of singers are very sensitive to alcohol. The changed tone of voice in drinkers indicates thickening and changes in the vocal cords. Both the bronchial and nasal tones are pronounced in chronic cases, and the carrying property of the voice is lowered. The laryngologists assert that it is comparatively easy to cure bronchial and nasal inflammatory conditions in persons who abandon all use of alcohol or narcotics, but unless this is done the disease will continue almost indefinitely. It is also shown that alcohol is a large factor in the production of grip and chronic catarrhs of the throat by deranging the capillary circulation and interfering with the vitality of the nerve cells. Alcohol is a prominent etiologic factor in pulmonary tuberculosis. But of the two evils, alcohol is a greater national curse than tuberculosis.

The treatment of chronic alcoholic inebriety should receive more scientific considèration from the medical profession and sociologists. The treatment of poisoning with ptomaines and drugs is well in hand, but the treatment of alcohol poisoning and addiction still receives

most of its attention from the mercenary exploiters of "cures." As the insane were, until recently, regarded as outside of the pale of medical attention, so now is the unfortunate alcoholic. Still it is one of the commonest diseases, and except among the most enlightened the victim is regarded as being possessed of a vice just as the insane man was once regarded as possessed of a devil. If a man is found on the street suffering with opium poisoning he is conveyed to the hospital and receives scientific and humane treatment. If a man is found in the same place suffering with alcoholic poisoning he is taken in charge by the police, his ambulance is a patrol wagon, his hospital bed is the floor of a cell at the police station upon which he is tossed, and in the morning he appears before a judge and is fined for committing a crime. Alcohol poisoning is a bad thing in the eye of the law; all other poisons are misfortunes.

Let us put away the mistakes of the past and place ourselves in the attitude toward alcohol which we should have were it a newly discovered chemical compound and had not been used by man since history began. Having learned its effect upon the body we should label it "poison," the same as the other drugs of this

class, and instead of being sold by vicious men who offer enticements for its consumption it would be secured only upon a physician's prescription.

The people look to the medical profession for instruction and guidance in matters of health. The time has come when we should take a positive stand on this question. We know the large harm that alcoholic beverages are inflicting upon the people. Its ravages are known as well as those of typhoid. We know them so well that we scarcely need discuss them among ourselves. We know how much weaker the resistance to disease is on the part of the man who has habitually taken alcohol than it is in the man who has not. We know the frightful mortality in pneumonia and Bright's disease among drinking men. We know the frequency and dangers of delirium tremens occurring, as it often does, in men who have drunk daily but never in amounts to produce intoxication. We know the difficulties experienced by the drinking man when he requires a surgical operation. It devolves upon us to instruct the public as to the dangers of alcohol just as it does to instruct them concerning the dangers of polluted water or bad milk. Alcohol is not a food. It

causes one tenth of the deaths in the United States; yet the people spend over two billion dollars yearly for this poison.

We should have in this country societies[1] under medical influence to promote the study of alcohol and alcoholism, to disseminate information on the subject, and to use their influence in furthering the cause of temperance. This is distinctly the province of medicine. The medical profession, more than any other class, could have the greatest influence for good in social and professional life, and no other class can be looked to for information so reliable. The time is ripe for a great and sane temperance movement, conducted by this profession, telling the public simply the truth about alcohol as we have told it about tuberculosis, disseminating knowledge and the incontrovertible facts. The value of such a movement to this country is beyond the power of the most hopeful to foresee.

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[1] Germany has become sufficiently aroused in this matter to have a Society of Physicians for the Promotion of Total Abstinence, which is doing a splendid work. It issues a *Korrespondenz-Blatt,* and its influence is making a positive impression upon the medical profession and the public. The American Society for the Study of Alcohol and other Drug Narcotics is a similar organization, and promises to be of great service.

VIII

THE VENEREAL PERIL

THERE are many conditions threatening society which because of their noxiousness and tendency to spread are properly designated as perils. Some of these seem inevitable, the remedies for their eradication not having yet been evolved. Others are distinctly remediable, all of the essentials for their removal being at hand. Given a great social evil, recognized by society as an evil, the recognition backed by a desire to be rid of it, society will destroy it when two conditions are attained. These conditions are: first, a scientific recognition of its nature, and, second, a general education of the public as to its significance. One of the greatest of social evils exists because only the first of these conditions has been attained. Its nature and harm are understood by a few, but the great mass of society gropes in ignorance. The ignorance of sexual life and sexual hygiene, added to the sexual in-

stinct, results in a combination productive of as great evil as any scourge that has afflicted mankind. Because of these society harbors a plague of disease and a pestilence of immorality which is emasculating the strong, destroying homes, weakening the foundations of society, filling our hospitals and asylums with wrecks of human beings, spreading disease into the sources of life, and deteriorating the race. This is the venereal peril, and it behooves us to cast aside prudishness and, with frankness and clear vision, see what it means.

The two great venereal diseases are gonorrhea and syphilis. In this country our statistics are incomplete, but in Europe seventy-five per cent of adult males have had gonorrhea, and twelve and a half per cent of adult males have had syphilis. In the United States it is calculated that sixty-five per cent of adult males have had gonorrhea. It is the most prevalent of all diseases next to measles. In this country 800,000 males reach maturity annually. Of this number 500,000 become infected with the latter disease. It is stated by Morrow [1] that twenty per cent become infected before the age of

[1] Transactions Society of Sanitary and Moral Prophylaxis, 1906.

twenty-one years, sixty per cent before the age of twenty-five and eighty per cent before the age of thirty. There are 14,000,000 male adults under the age of thirty in the United States, and the most reliable observers calculate that 8,000,000 of them have gonorrhea or its sequelæ. The trail of physical suffering which follows in the wake of these appalling figures is insignificant when compared with the mental anguish, the broken hearts, and the saddened homes that mark their path. The woman who cohabits with a gonorrheic is doomed to infection, and that such infection is the lot of a vast and growing army of American women is attested by the multiplication of gynecologists and of hospitals for the relief of these unfortunates. Let the layman not think of this as a disease of the vicious. Gonorrhea is a disease of the virtuous wives in our great cities as well as of the prostitutes. We have no statistics at hand upon the prevalence of this condition, but the busiest specialty of medicine and surgery is that which deals with these diseases. Gynecologists report that more than seventy-five per cent of the operations required for inflammatory diseases in women is due to gonorrhea. The majority of abdominal operations upon women are

for this cause. This does not take into consideration the large number of women who are not operated upon but who drag out a miserable existence.

Gonorrheal infection is acquired by the innocent wife from her husband. In his bachelor days he got it from an infected woman. He thought he was cured, but there were gonococci living still in the deep parts of his urethra which were awakened to activity by the renewal of sexual life. Unhappily, this disease makes little or no impression on a man's general health, and he thinks of it lightly, while but few diseases afflict women that are fraught with greater chronicity and more permanent harm. The reawakening of his old disease and the appearance of the same thing in his bride has prompted many a man to accuse an innocent woman of having been the original purveyor of the malady. A man who has once had gonorrhea is a dangerous man to marry, and sixty-five to seventy-five per cent of the women who wed are accepting this danger.

These statements are not matters of surmise; our knowledge of this condition is woefully complete. It can be recognized with certainty. The gonococcus, the cause of the disease, is one

of the most easily identified microörganisms, and there is no disease with which the gynecologists are more familiar.

Childless marriages were once thought to be due to certain incompatibilities, visitations of Providence, and inherent defects on the part of the wife. The wife was once regarded as guilty in the sight of the law if she bore her spouse no children, and could be cast aside for sterility. Scientific knowledge has thrown light upon this dark place in the progress of women's emancipation, and the culpability is now placed where it belongs. Gonorrhea is responsible for most of the sterility in childless marriages (seventy-five per cent is a conservative figure). Pretty full statistics are to be had upon this subject. Unfruitfulness in thirty per cent of marriages is due to sterility of the male, caused by gonorrhea having involved the spermatic duct and the epididymis. Active disease in these cases may have subsided, the male not conveying infection, delivering to the female neither gonococci nor spermatozoa, but being apparently potent and healthy. Forty-five per cent of the unfruitfulness in marriages are due to gonorrhea in the woman acquired from the man. The infection, once implanted, progresses

upward into the uterus and thence through the Fallopian tubes to the ovaries. It is the married woman's most common disease. Every prostitute has it and, fortunately for society, it renders her sterile. It is the bond of sympathy between these two great classes of women supplied by the husbands. It exists in every degree of severity. In some it produces scarcely a symptom, often not reaching the tubes until after the first and only child has been born, and then sealing them up against the passage of further ova and producing what the German's have designated as "one-child sterility." In others the fulminating signs are present: acute inflammation of the tubes and ovaries, abscesses, peritonitis. Between these lie all degrees of pelvic ills, acute and chronic. But ultimately the tubes are sealed and sterility supervenes. This condition is the most prolific cause of extra-uterine pregnancy. Seventy-three per cent of spontaneous abortions in the United States are due to endometritis which is usually due to gonorrhea. The large proportion of sterile marriages and of abortions is not a matter of choice, as is commonly believed, but is due to disease.

There are 110,000 blind persons in the United

States. A large part of this blindness is the result of venereal disease. More than eighty per cent of the cases of blindness of the new born are due to gonorrhea, infecting the eyes of the child during the moments of its birth. While this eye disease is easily amenable to treatment still twenty per cent of all blindness at present in the asylums of New York State is due to that cause alone. Syphilis also furnishes its quota.

Another venereal scourge of childhood is gonorrheal vulvovaginitis—a disease of horrible prevalence. The little girl in the clean house contracts it from the hands of the gonorrheal nurse who gives her her bath. In institutions, asylums, and orphanages, it breaks out and passes from child to child, being transmitted by clothing, towels, and the bath, until it assumes the character of an epidemic. Its consequences for later life are serious, and its chronicity is much to be dreaded. Slow and insidious, often scarcely affecting the general health of the little girl, the infection finds its way to the uterus, tubes, and ovaries producing conditions which result in sterility in later life, and often causing developmental defects in these organs and retardation of their growth.

In our great cities acute gonorrhea in little girls, contracted by actual sexual contact with the male, is by no means an uncommon condition.

Concerning syphilis, Pinard, in a study of 10,000 consecutive cases of miscarriage in Europe, found forty-two per cent of them associated with this disease. Hereditary syphilis claims a mortality of from sixty to eighty-six per cent. It is one of the most fatal of diseases among the new-born. The most reliable statistics to be found in connection with this condition are in France, where 20,000 children die yearly of syphilis, and where the total mortality from that disease is seven and a half per cent. This is not because the disease is more prevalent in that country, but because the statistics are more carefully compiled. It is quite as prevalent in England, and in Russia it is so common that whole villages are infected, with but few individuals who are not syphilitic. In Zanzibar five sixths of the natives are syphilitic. On the Gold Coast thirty per cent of the population has this disease. It was carried to these places by the onward march of what is called civilization. Cook's crew took syphilis to the Sandwich Islands,

where it soon became epidemic. Civilization and syphilization: *Arcades ambo!* Syphilis is the great cause of the destructive diseases of the nervous system. In its inherited form it is the greatest cause of epilepsy. The progressive paralysis of childhood is one of the results of hereditary syphilis. It is the most prevalent cause of paresis and locomotor ataxia. The more thoroughly the histories of the insane have been studied the more has syphilis loomed up as a causative factor. In the United States Army syphilis causes the discharge of more men for physical disability than does tuberculosis. Although it is amenable to treatment still it decreases the period of life expectancy by one third. It lowers the general resisting power of the individual and renders him particularly prone to tuberculosis.

These diseases attack not only the young, but slay the child before it is born. They prevent conception. Most of the sterility of women is due to gonorrhea contracted from the male. Fifty per cent of gonorrheal women are sterile. The busy specialists in venereal diseases give us these figures out of the abundance of their experience. Morrow has said that seventy per cent of the women who presented themselves

to him for treatment for venereal diseases even at the public hospitals were respectable married women who had been infected by their husbands. In 1901, in New York City, 162,372 cases of gonorrhea and syphilis were treated in the private practices of physicians. This represents but a minority of the cases, as the majority are treated in hospitals, in drug stores, in the offices of the advertising quacks, and a large proportion are not treated at all.

We must beware of distinctions between the guilty and the innocent. If there is such a thing as guilt and innocence the guilt lies with parents and teachers and with the state. Bulkley has published a book entitled "Syphilis of the Innocent," in which he reports some 3,000 cases of this disease contracted by agencies external to venereal congress. It is a scientific recountal of appalling sadness, describing infection from the drinking cup, the public towel, the barber's razor, the kiss bestowed upon the helpless child, and through a hundred other avenues of infection.

The prevalence of these conditions is one of the darkest blots upon our civilization. The physician knows their horror; his services, alas, are sought when the damage has been done.

The tragedy of marriage is known to him. The pomp and ceremony, the flowers and ribbons, the music and sweet odors, all too often fade away into the grim presence of blighted hopes, of household joys. Poor man with the invalid wife! poor childless woman! We pity you both. It is not your faults; you would have lived and loved in health and happiness had parents and teachers been true to you!

There is much in literature which it behooves us to recognize as prejudicial to sexual morality. It is not the statements of the whole truth which we need object to — there is no naked truth which need not be told, provided all is told, and that in truthful perspective. What makes for ill is the glorification of sexual crime and the heroization of sexual criminals. The public prints which exploit the doings of the violator of the marriage vows, to the neglect of the noble deed of virtue, we know are breeding harm. The literature of salaciousness is productive of decided damage. Nor would I exempt from this category the recountals of sexual sins as found in the Bible, and the religious glorification of men whose sexual lives should be spoken of with shame. The exalting of these immoral acts, by surrounding them

with the halo of reverence, makes for results which are subversive of morality.

It is an extraordinary thing that the subject of sexual morality, which is so close to the happiness of domestic life, should have been so neglected. When Herbert Spencer asked and answered the question, "What knowledge is of the most worth?" he presented the preëminent importance of a knowledge of the laws of health as the supreme safeguard of the happiness of the individual. But tardily have educators proceeded to apply the great principles which he laid down. With studied care this question of sexual health has been ignored by teachers and, sadder still, avoided by parents until finally the child learns it, as learn it he will, from lewd companions; but truly what he learns is not sexual hygiene but sexual immorality. Let us not make the mistake of saying that this is a dirty subject and that we cannot touch it. I have heard this said by those who, while professing to fight evil, confined the fight to nice, genteel evils which are chiefly matters of the imagination and of belief. No, it is a clean and glorious thing to say the word that shall save a young man or woman from invalidism and moral discouragement. There are things to be said and

things to be done which should be said frankly and done boldly.

The protection of the innocent demands that the young shall know the sexual biology of man just as he should know of the fertilization and blossoming of flowers. The sexual instinct is the most important of all the social instincts. It is wrong and false to degrade it by treating it as though it were a shameful thing. The teaching of one of the dominant modern religions that sexual joy is carnal sin and that the death of the body is the great goal is not as sound as that of some of its precursors, which exalted the giving of life. The mental and moral state of "Western civilization" makes it impossible for it to interpret fairly or intelligently the real spirit of the old phallic symbolism. But when we come to look at these things rightly we shall see, perhaps, as much virtue in the symbol of life as in the symbol of death. One of the most beautiful gifts we have received from nature's hand is the love of man and woman. To say that man is conceived in sin is but one of the dronings of cant.

Let us speak plainly. The best interests of the individual, of the home, and of society demand that man shall cohabit with none but his

wife; if a woman is not his wife he shall not cohabit with her. This is a simple rule; it will stand the test of analysis, it is easy to remember, and it should be taught, along with the reasons for it, to every boy and girl who reaches puberty.

Infringement of this rule makes for ill. The penalties and dangers in its violation I should enumerate as follows:—They are: the moral and social degradation of a woman who otherwise would live rightly; the danger of causing disease in such a woman; the encouragement, by example, of a practice which stands preëminent as the great cause of social unhappiness; the subtraction of just so much joy and devotion from the woman who should or will stand in the proper relation of wife; the possibility of the propagation of illegitimate children; the strong probability of contracting venereal disease; the danger of transmitting physical or moral blight to one's offspring; the development of vicious habits; the cultivation of immoral society; the wasting of time and energy in unprofitable company; the social harm to oneself and family; the moral harm which springs from acting in secretiveness and shame; the contracting of the concomitant vices which

go hand in hand with venery for venery's sake; and the postponement of the organization, or the weakening of the strength, of the most potent factor in the solidarity of society—the home. These are strong reasons against extramarital sexual intercourse, and each is susceptible of serious consideration. Moreover, to these should be added the fact that sexual intercourse is absolutely not necessary for one's health; the suggestion that it is necessary is only repeated and passed along by the offenders who desire an excuse for their own laches, or by those who in ignorance repeat a tradition.

It is not so much a want of virtue or of morals that concerns us as it is a want of knowledge and adequate instruction. The only cure for the lack of virtue which will stand every test is knowledge. Evils which cannot be remedied by the cleansing power of truth are beyond the reach of human agencies. If to know all is to forgive all, so also is it true that to know all is to escape the necessity for being forgiven.

The beginning of the victory over this great social scourge will come when its real character is known and understood by all men and women; when the penalties for violations of sexual hygiene are as common knowledge as are

the penalties for violations of the common law of the state; when the dangers of falls into adultery are understood as well as are the dangers of physical falls; and when the tinsel is struck from the shoulders of women of loose sexual practices and the pitiable creature beneath is exposed. There is little distinction between the innocent and the guilty; all who suffer through unenlightenment are innocent, for no one is so guilty as to elect unhappiness.

At the bottom of these troubles lies the ignorance which it devolves upon society to remedy. Medical science has accumulated the knowledge which is necessary to correct these evils; it remains for the parent, the teacher, and the guardian of public morals to apply it.

IX

THE INSTRUCTION OF THE YOUNG IN SEXUAL HYGIENE

"Learn what is true in order to do what is right."—HUXLEY.

THERE are certain accompaniments of civilization which at one time were useful, and which, though no longer of service, still retain their hold and influence by virtue of traditional esteem. There are superstitions which have been of use to mankind, and which we still permit to linger and enjoy a bounty in the presence of enlightenment long after they should have been dismissed. Among these relics of the past there is one ancient virtue, lingering beyond its time, for the entertainment of which we pay a mighty price. It is prudishness, and it takes its pay in lives and happiness and in domestic joys and the virtue of our children. In the most important branch of human learning, that which means the preservation of health and physical efficiency, prudishness raises its hand and denies enlighten-

ment in that knowledge which is precious beyond price.

The best preparation for moral and useful living is to be found in knowing the truth, and the most important truths for the individual to know are the truths concerning himself. One of the errors of our time is that we take out of the book of human knowledge a whole chapter, write "tabooed" across it, and sequester it from those who need it most.

Let us be honest, and let us begin our honesty with the child. It would be a boon to humanity if we would be frank and fair with children. Dissembling has wrought much ultimate harm. It is unfortunate that youth is willfully deceived by the parent who excuses himself with the self-assurance that the child will learn for himself soon enough what is true. It is not alone in the realm of the religious superstitions in which men no longer believe, nor in the little sentimental, domestic, fairy tales, but it is in the questions of sex life that the great harm of dishonesty springs.

We are beginning to appreciate the importance of the teaching of the natural sciences. The moral value of such teaching is beginning to be realized, but it must be carried home to

the individual to be of the most good. Children should understand at least as much of their own selves as they do of the starfish or the butterfly. When the father calls his son into the library, closes the door, and with awful formality announces, "My son, I wish to talk with you upon a subject which is not touched upon in any of the things which you have as yet studied," we realize that the father is admirable in his intentions, pitiable in his method, and that if the boy had had the simple advantages which should have been his by right no such performance as this would have been necessary. Moreover, unless this library scene is enacted early the well-meaning parent will have little that is new to offer; juvenile wisdom will have preceded him. The phenomena of nature are so intimately associated with human interests, every branch of knowledge overlaps other branches to such a degree, that we shall do wisely in dealing with the child not to wander away from nature's intimacies, but rather to take advantage of them in driving home the lessons of life. The biological principles which underlie reproduction among the flowers also underlie reproduction among the lower animals and man, and the children should know the sim-

ple truths concerning them. If they are not thus taught they will learn to their harm to think of the human sexual relation as something peculiar and mystic.

We use in our language such words as *pudic* and *pudendum*, from *pudere* (to be ashamed), of which we might well be ashamed, for they are symbols not of virtue, but of lack of virtue. To teach the child that certain parts are vulgar and others not is the beginning of evil. According to the older pedagogy the liver is honorable, the kidneys dishonorable; the organs of mastication genteel, but those of generation vulgar. We grow up from childhood with these ideas so strongly fixed in our minds that even among the thoughtful and mature it is almost a psychological impossibility to think with favor of the ideal state of mind which regards none of them as *pudendus*—to be ashamed of. Surely, persons having children under their care, in the present state of enlightenment, need not ride roughshod over the usages of the times —that would be social unwisdom—but they can refrain from prudishness and dishonesty, and they can approve of the teaching of the natural sciences, and by pointing out their relations to human life and morals they can endorse the

sanctity of the human body and the goodness of all that is useful.

Some of the ancient civilizations of the East have exemplified these things, and accordingly displayed a superior morality. When our missionaries have reported them as being vulgar, and striven to change their ancient customs, it often has been because the missionaries were vulgar and not they. When we have attained to the state of civilization which lies within our reach the *pudenda* will not be the normal generative parts, but the tuberculous lung, the typhoid intestine, decayed teeth, bunions, and idle hands—these are the things of which we shall be ashamed.

How and what shall the youth be taught concerning the sexual questions? This is not difficult to answer if we put aside guile and stand for honesty with the child. Between four and six years of age children are full of curiosity; the world is full of enigmas, and their minds are reaching out for the truth. It is not necessary to volunteer information to them, but let their questions be answered truthfully. Boys between eight and ten and girls between eight and twelve should be *taught* the physiology of human sex. This should be conducted by intel-

ligent and discreet teachers, preferably parents, not by class-room methods, but by informal, close personal talks. The best teacher is an intelligent mother. These talks should have been preceded by the regular studies of the natural sciences. Children of this age should have studied already the elements of botany, zoölogy, and physiology, the modes of propagation and growth of plants and the lower animals. They should know the meaning of seed, fertilization, and the sexual distinctions, following nature from the simple little truths up to the great things. These are of more importance to them from a cultural and practical standpoint than are grammar, history, rhetoric, or algebra. When we come to the sexual relations of men and women it is not advisable to discuss the details of sexual contact. The judgment of the teacher will tell how much to teach, but let naught be said that is false or misleading. If there have been the proper preliminary studies of the natural sciences the human physiology of sex will unfold itself in a natural sequence, and the child will learn in a dignified and respected way what most children are now learning in association with the obscene.

Boys at this age should be taught the sacred-

ness of their person, the importance of good health and cleanliness. They should be instructed in the physiological relations between their brains and sexual organs, and the importance of pure thoughts. Inasmuch as practically every boy, sooner or later, between eight and fourteen learns or is taught to masturbate, the harmfulness of this practice should be dealt with. Boys should be instructed not to handle themselves. At fourteen to sixteen the boy should be told more fully of sexual things. He should know his power of fatherhood. Lest he become worried concerning seminal emissions occurring during sleep, he should be informed of their possibilities and harmlessness. Unless he is told this he will inevitably become nervously concerned at the advertisements which the quacks, who prey upon the youth, will place in his hands. He should be told the importance of sexual continence as set down in the previous chapter. He should be taught that self-control is a sign of manliness and strength, not of effeminacy and weakness. It is the boy of strength and courage who declines his comrade's challenge to indulge in alcoholics and visit lewd women; it is the weak boy who cannot decline. He should be taught to have confidence

in his parents, and when questions come up upon which he desires enlightenment he should feel no restraint in asking advice or information. He should be told the causes and the nature of the venereal diseases, and at the age of eighteen girls should be taught the same.

In a general way girls should be taught about the same as boys, but particularly in reference to the things which concern them. Menstruation should be explained. On the whole, they require less instruction in these lines than do boys. The girl at puberty should be taught the significance of love and sexual feelings. She should know the meaning of the strange emotions that fill her mind. The value of this knowledge to red-blooded girls may not be appreciated by asexual dames, but it is a matter of vital importance. They should be taught the danger of permitting liberties with their persons. They should know the meaning of the mating instinct and their interest in boys. Could we lay bare the story of the debauching of young girls we should realize into how great a blessing a little knowledge might be turned.

Youth should be encouraged to have an interest in wholesome occupation requiring both physical and mental application. They should

be taught to have ideals. The adoration of great and good men is a splendid outlet for a boy's sentiment. After puberty they demand sentiment, and they should have it. Teach boys chivalry. Good female society, games, dances, amateur theatricals, and an occasional love story are all in this line, and help to round the normal youth. Athletics to a moderate degree are of benefit, particularly if supervised by a competent instructor. It is a splendid thing for boys to have pride in their physical health, to cast out prudishness, and to be made to strip occasionally for weighing, measurements, and inspection. Athletics of this sort make for chastity. "Frisch, frei, frölich, fromm," the Germans say. Above all, boys should be taught the fallacy of the so-called "sexual necessity," and the danger and absurdity of the old idea of "sowing wild oats." The boy should know that there is no more need for him to "sow wild oats" than there is for his sister to do so.

Both boys and girls should know that there is a bad side to life. It is not true that all is good and beautiful. In due time they should be warned that there are unfortunate women who prey upon men and boys, and that there are

men who make girls their victims. Girls should be taught the sacredness of their bodies and the wiles by which advantage is taken of them. Youth should know that the women who lead lives of sexual looseness are not happy in it. Their lives are short and their ends are wretched.

Above all, teach the youth reverence for his mother. It is one of the greatest powers to hold him to the right. Let him know all that she has meant to him; how that he was once a part of her very body; how she bore him with pains; how she nourished him from her substance; how she was with him through all the dark nights and watched by his bedside; and how that her love is the greatest of all. He will do it for her—live the right life.

There are superstitions which militate against attaining the best results in teaching sexual hygiene to the young. I do not refer to the doctrine that the body is but a vulgar earthly thing, to be sloughed off in joy, and that we should give no thought of it—this is now but little taught and less believed—but I refer to the doctrine that sins committed against the body of oneself or another can be expunged. Let us teach that sin provides its own punish-

ment, and that when once committed it is irretrievable. We are punished by our sins. Forgiveness, in the religious sense, is the rock upon which much morality is shattered. Let us not delude the young with the fatuous hope that after the commission of sin there is something that can be done, some one to whom to go who can make it all right and wipe away the past. Such a teaching is immoral. The past cannot be expunged. Let us, instead, teach the young the fear, or rather the respect, for consequences. Teach them that these venereal diseases are not the punishments for depravity, but that they are natural consequences. Above all, let us be reasonable—it is the easiest course. Physical morality is the morality we are dealing with. The morality which has not a physical basis does not concern us. It needs no vague and esoteric grounds of appeal when we can teach the youth what is best for him and his happiness. A noble expediency is that which teaches the child to be mindful of what is best for himself.

The lines of teaching that will help the child must be practical and reasonable. The Church has asked that children be taught the religious superstitions. They have been tried and they

have failed egregiously. If the Church desires to teach the things that will help the child, let it desist from the unnatural and unintelligible; let it cease in its glorification of the doings of an obscure, unprogressive, and uncultured nation—long since gone down to extinction—with its wars and killings and intrigues and shameful superstitions; and if it wants to teach about God, let it be of the great God of nature, and not of the wrathful Jehovah whose delight was in the slaying of the innocent and in holding personal communications with lustful men. There is more enlightenment, culture, and wonderment in reading the message written in the swirling planets, in the sprouting seeds, in the unfolding petals, in the growing egg, in the flight of birds, in the tiger's skin, and in the mother's love, than there is in the fanciful writings of interested and superstitious men who have made credulous humanity believe that they were handing down a message. If we want the child to have the word of God, let him be taught to read it himself at first hand; and let him study the lives of men and women who were really wise, practical, and good, and whose examples it would be both possible and wise for him to follow.

Let us, furthermore, bear in mind that it is knowledge of the real things that is to save our youth and not prudery. I have known boys and girls eager for information, with the simple hearts of children, to have their questions evaded by their parents—denied the knowledge that might have saved them lives of misery—put off with platitudes. Ignorance is not innocence. A father brought his only son, eighteen years old, to a boarding school. He said: "My son has always had a private tutor. He is as innocent as when he was a babe. I have brought him here because you have no bad boys. I want him kept pure."

The following are the facts about the boy: At the time these words were spoken he had been practicing onanism for three years. On his return home for his summer vacation he took with him an attack of gonorrhea acquired from a lewd woman. Eight years later, having graduated from college, he was married to a beautiful girl full of hope and joy in the promises of life. She was operated upon for gonorrheal salpingitis within a year after a gorgeous wedding. Ten years have now elapsed; she is still a semi-invalid. The father has said that it was a shame that his son had made such a

mistake and married a sickly, sterile wife; and the law makes it a crime for the physician to tell this silly old man the truth because it would be violating the professional confidence of the patient. Why should not this young man have been given the simple knowledge necessary to save his home and happiness? He should, and the girl, too. Youth should know the meaning of the sexual craving in order to know best how to protect itself from mistakes. The average boy is sensible and appreciates what is good for him if he is given a fair chance. The average man wants to do right. He does not want venereal disease, nor does he want to transmit it to another. He does not want a sick wife. He would not be prone to fall into sexual errors did he but understand.

In dealing with the young, let us give reasons. The boy's mind is a man's mind and it demands reasons. Arbitrary dicta belong to the field and camp, but not to the home and the school. Let us deny the child no truth that can serve him. Not legislation, nor fairy tales, but education is the solution of this problem. Violations of the health of the body are moral sins in which no remedy is so effective as the simple knowledge of the truth.

X

SEXUAL MORALITY AND THE STATE

THE widespread existence of venereal diseases as results of sexual immorality, and their importance as factors affecting the homes and the physical efficiency of citizens, together with their importance as factors productive of classes which become a burden upon the community, all make these conditions of economic significance to the state. The state recognizes the necessity for the control and supervision of measles, scarlet fever, and smallpox. Children with these diseases are debarred from school and forbidden contact with others. The state lends its aid in the fight against tuberculosis, but the venereal diseases in most communities are not recognized by the law notwithstanding that their destructive effects are greater than all of these other diseases combined.

In the United States one factor receives official attention—that is, the prostitute. She is

segregated, taxed, regulated, forbidden, arrested, fined, imprisoned, scorned, and cursed. Who is she and what has she done that she should be visited by the contumely of society? She has gratified men. Still there is many an honorable wife who has no higher function in the world than this. What brought her to her lowly occupation? Several causes, the most important of which are the following: She loved a man who pretended that he loved her; he extorted from her all that she had to offer and cast her aside; society spurned her; she knew but one way to earn a living and in her desperation she turned to it. Another was forced to it, as a last resort, by poverty to support herself or her family. Another was driven to it by parents, husband, or guardian. Another was made intoxicated and debauched, and discovered that from that day on the companionship of good women was denied her. Another was made the victim of a systematically laid trap; she was caught, and ever after regarded herself as unclean. Another coveted fine raiment and jewels; she envied the rich who had them; she read each day in the great daily papers of the sexual irregularities of those who wore these fine things; the two be-

came inseparably associated in her mind; the opportunity to combine them was offered to her; she accepted it. Another fell because the great passion welled through her being so that she could not control it; she loved the imitations of love; no one had ever told her their significance. Another inherited an unbalanced nervous organism; the strange conditions which men call by the name of degeneracy were bequeathed to her; she was lacking in moral perspective and appreciation of values.

When any of the above conditions exist, it is made easy for a woman to fall. The downward path seems the only one, for on every side she is hemmed in by men—men everywhere, who beckon her on and, leaving her, push her farther on her way. She cannot escape them. They have demanded her, surrounded her, and made her what she is.

Every one of these women is the victim of defective education. Had most of them known the simple truths concerning sexual physiology and hygiene, the meaning of sexual passion, the dangers of venereal diseases, and been taught the real interests of life, society would have been saved their loss. This is personally true of all but the degenerate, and in her case the

same lessons should have been taught her forbears. There are ten thousand prostitutes in New York now who came from respectable homes, who are the daughters of loving mothers, and there are ten thousand little girls now happily playing with their dolls by their mothers' sides who are to grow up and take the places of these when they have been swallowed up by the great consuming maelstrom of the city. It is not for the ten thousand prostitutes that we need be most concerned—they are lost; but the ten thousand little girls are worth saving. Ask their mothers if they are not. The most important factors for their salvation are education and knowledge. Let its light fall upon the dark places. Ignorance is not better than knowledge. The next important thing is better social and economic conditions. When every one who wants to work shall have work and fair compensation for it; when every adult, male and female, does his or her quota of work; when the aim of education is to prepare for life, healthfulness, and efficiency, and not for college, idleness, or death; when every healthy man who wants to marry may marry,—then education will do the rest, and the venereal plague will be overcome. Idle women and bad

women are often so through lack of education. Education helps by filling empty brains. Give a woman knowledge of the vital and interesting things about her and she is not apt to degenerate.

Two interesting features of this subject should not be overlooked: One is the fact that while the laws regulate the prostitute, the male offender, who is her cause, her patron, and the vehicle by which her diseases are conveyed to the innocent—the male offender may go his way, and the law wishes him Godspeed. It is as though we should regulate the plague by shutting up the women and allowing the men to go free. Another important feature of this question is that the chief patron of the house of prostitution is the married man. This fact takes us back to the social and economic conditions of the home, which must be remedied before these matters of the sexes can ever be adjudicated.

Another matter which the state has in its power to regulate is the alcohol question. Alcohol is the seducer's ally. It has the power to paralyze the inhibitive centers; it causes a blunting of the moral sense and of the willful control of conduct; it subjugates the higher fac-

ulties and leaves the animal passions to follow their uncurbed inclinations. Of all the active, extrinsic agencies, it is the greatest for sexual harm. The dance hall is a public necessity, but introduce alcohol and it becomes the antechamber of the brothel. When the public comes to understand the relations of alcohol to the sexual sins, a long step will have been taken toward the overcoming of both of these evils.

The evil influences of the theater, where sexual immoralities are presented in an artistic and attractive setting, is a matter with which the municipalities are failing to cope. The moving-picture shows have become a positive menace in most cities in America. They attract children and the young. Many of the exhibitions are degrading, showing every variety of sexual vice. Young boys and girls are witnessing moving pictures showing men and women in the act of sexual intercourse. Chicago has just caused these lewd exhibits to be stopped, but they opened business in a neighboring city. It was observed that the schoolboys in one neighborhood in New York frequented these cheap shows on Saturdays. The gymnasium and playgrounds of one of the schools which had always been closed on that

day were thrown open, with the result that the boys patronized the school grounds instead of the shows. Playgrounds and breathing places where youth can work off its energy are essential for good results.

Venereal diseases place an enormous burden upon the state. Blindness, insanity, deafmutism, epilepsy, idiocy, degeneracy, and crime follow in their path. At least one fourth of our public institutions for caring for defectives is made necessary by venereal diseases.

These diseases play an important rôle as a cause of divorce. The statistics show "incompatibility," "cruelty," "nonsupport," and other more genteel causes, when behind it all lies the real cause—venereal disease which has rendered the wife unattractive, or which has betrayed the infidelity of the husband.

One of the most important steps in the emancipation of woman is to relieve her from the position of subjection to man. When public sentiment overcomes the fallacy of the "double standard" of sexual morals, and makes it as much of a reproach for the man to bring gonorrhea into the home as for the woman, and when women have an intelligent attitude toward these matters, based on knowledge, and are not

simply supposed to be dependents to take whatever the husband gives them—then we shall be approaching the ideals of civilization.

The monogamous household must be recognized as the greatest civilizing influence. Men have created the standard of special masculine privileges because they had the power to create it. Now they are going to relinquish it because they have the chivalry, honor, and good sense to see that it is both unfair and dangerous.

A word concerning literature in its relation to this subject. The freedom of the press costs us a great price. One of the New York dailies was recently forbidden entry into the mails for maintaining a so-called personal column which was but a thinly veiled advertisement of schemes for the debauching of women. The advertising columns of the daily papers of many of our cities are a disgrace to these communities. They carry the advertisements of that great class of criminals who prey upon the misfortunes which they seek to create. Young men find no small encouragement in the repeated announcements of sure cures for the troubles into which their wrongdoings might bring them. The girl pressed to the point when she is about to fall may yield when confronted

by the advertisement vaunting the virtues of the preventer of conception. The presence of these immoral and fraudulent things, flaunted daily in the face of the public, is a standing menace and reproach.

In most countries the time is not yet ripe for compulsory reporting of contagious venereal diseases to the health authorities. It must be preceded by education. No law is effective unless the people understand it and are in sympathy with it. The privileged communication, the interests of the patient, the rights of the individual all stand in the way. While the venereal diseases are more dangerous, and are doing more damage to the human race than leprosy, plague, smallpox, and scarlet fever combined, the fact that they carry with them a stigma makes reporting them difficult. If they were made reportable, many patients would not present themselves to the reputable physician for treatment, but would frequent the quack. Some states have required reporting without giving the name of the patient. This does not accomplish results. Ultimately these diseases must be reported. The state must know how prevalent they are and where they are most prevalent in order to apply remedies. Treat-

ment must be made easier. The quacks must be driven out; they breed venereal diseases. Berlin, Dresden, and a few other cities require that prostitutes shall be examined at frequent intervals and sent to the hospital if found with infective disease. This has never been satisfactory, as the women may become infected within an hour after receiving a bill of health; and when we realize that some of these women accommodate ten or twenty men a day, the weakness of the method becomes apparent.

But one thing the state can do, and now: it can demand a clean bill of health from the man who applies for a marriage license. The innocent wife is the one who too often reaps the wild oats sown by the husband. The state owes it to her to see to it that the marriage contract, with which it is so much interested, shall carry with it a guarantee of safety. When a woman yields herself up for motherhood, she is rendering the greatest service that anyone can perform for the state, and she above all of a country's charges should be protected. The nations that throw this safeguard about their women are destined to march in the van of human progress. If the state is not ready to take cognizance of every man with gonorrhea

or syphilis, as it now does in the case of every man with smallpox or scarlet fever, it at least must be ready to prevent him from deliberately transmitting these diseases to another when he signifies his intention so to do.

American cities can do little good by licensing and hounding the prostitute. Where this has been done the police and politicians have taken her earnings. In New York City are at least 30,000 prostitutes whose earnings are over $60,000,000 a year. The amount of venereal disease which they diffuse is incalculable. Leckey's view of the prostitute as a necessity must be made obsolete. Municipalities can better devote their energies to teaching and warning against her than in regulating her business. Education is cheaper and more effective. If men knew as much of her as of the latest murder trial her business would forsake her. Let the state turn away from the prostitute and interest itself in her patrons and in the vicious conditions which have produced her—this pitiful woman of whom Hafiz said, "Bride of a thousand bridegrooms hath she been."

Prevention of venereal diseases is most needed. If any animal industry were afflicted with this scourge, the state would be aroused to

strenuous activity, and neither pains nor money would be spared to stamp it out. But this blight affects our sons and daughters, not our sheep and hogs, and the state raises but a feeble voice against it. Norway and Sweden made venereal diseases reportable, circulated pamphlets of instruction, and reduced their prevalence thirty-four per cent. This country must eventually do the same. We should have tangible data. The subject should be discussed —it thrives in darkness and silence. Typhoid and tuberculosis are being overcome by discussing them and by disseminating knowledge concerning them. Curative medicine is in the hands of the medical profession, but preventive medicine must be in the hands of the public. The diseases of society cannot be healed without publicly speaking of them. These diseases thrive on prudishness, ignorance, and the beneficent passion by which the race is kept alive. Prudishness must give place to candor and honesty; ignorance must be overcome by promulgating the facts and furthering the teaching of sexual hygiene; and passion must be guided by knowledge.

XI

SEXUAL CONTINENCE

SOMETIME after having discussed the subject of sexual morality, I received the following communication, which is worthy of serving as a text for some further elucidation of this subject.

"I heartily agree with all that you say concerning sexual morality. I do, however, wish to ask a question concerning some points of the subject. May I ask what are you going to say for the unmarried man who has sexual passion and is desirous of leading a decent life—a man to whom every suggestive look from amorous women, every lascivious picture he sees, and the subtle influences that meet him on every side, all conspire to inflame his senses.

"You may say to the unmarried man to find a wife. There may be good reasons why he should not get one. How shall such a person not be disturbed by vain longings by day and erotic

dreams by night? I grant you that the proper teaching of the child early in life will help to enable him to control his sexual nature, but what about the man who went into the world in ignorance and learned all that he knows of sexual things from his companions?

"Lots of men do not care enough about sexual matters to be bothered; but there are many who see the error of their habits, who desire to reform, and to whom this means the fight of their lives. What do you say for them?"

The conditions represented in this communication are by no means uncommon. They are real conditions, and must be met in a practical way and not vaguely. In the first place, let it be understood that the best interests of the individual demand that man shall cohabit with none but his wife. If a woman is not his wife he shall not cohabit with her. Infringement of this rule is fraught with dangers, which have been enumerated in the preceding chapter. One very important thing is that the minds of these men must be disabused of the fallacy of the sexual necessity. The exercising of the sexual functions is absolutely not necessary for a man's health. Continent men as well

as physicians know this. Moreover, the best preparation for continence is continence. The sexual glands do not weaken from disuse any more than do the tear glands. Good general health is the most important means of preserving sexual vigor. Excessive sexual activity destroys it.

Concerning the specific case in question—the man who yields to what he knows is wrong and harmful—there is just one thing for him to do, and that is to stop. If he desires to correct his habits, but does not, and is much in a state of sexual excitement, then I should say that one or more of three things is the trouble: he is either suffering from idleness, the prime promoter of vice; his education and knowledge of the simple things are defective; or he has a mental defect which should receive consideration from the neurologists.

A man who has a serious hold on the essentials of life, and who is busy with useful work, as every man should be, whose mind is occupied with thoughts of wholesome interests, or whose time is consumed by his vocation, does not suffer the sexual dangers inherent in idleness.

Every man should have a knowledge of the

anatomy and physiology of the sexual organs, and he should be familiar with the meaning and dangers of venereal disease, and also with the objections to extramarital venery. If he is not, his education in the simple essentials is defective. The prudishness which deprives young men of this knowledge is decidedly immoral in its results. The Japanese, among whom men and women innocently bathe in the same pool, are free from prudishness and from the vulgar sense of suggestiveness at the sight of feminine curves, which characterize the ogling Occidentals. For the same reason a boy brought up among sisters has less of this pernicious prudishness which covets the sight of hidden charms. Carlyle has said that the beginning of wisdom is to look on clothes till they become transparent. The person to whose eye they cover a great and elusive mystery is not well educated.

To answer the question, What is this man going to do about it? is as easy as answering the question, What is the kleptomaniac who wants to stop stealing going to do about it? He should stop; and if he does not, he should receive the attentions which a mental defective merits.

As to the healthy man, let such a man, first, be busy; and, second, let him resolve upon the course which he desires to pursue. With fixed determination, a sane man can do about what he pleases. I know an unmarried man who has said to himself, "I shall marry some day; somewhere in the world a woman is keeping her chastity inviolate for me; and I shall do the same for her." With this philosophy he dismisses the subject from his mind; the matter is disposed of; he does not bother his head with sexual debates; the question is settled; it cannot come up for reconsideration; and he gives himself and his energies entirely to other matters. It is a splendid thing for a man to pronounce a final settlement upon an important question which otherwise might constantly recur and harass his mind. The man with a determined principle has clear sailing. A course of conduct then becomes easy. It is the unfortunate weakling who has not decided his questions, and the man who does not want to decide them, who keep themselves in hot water.

Let these men in question make themselves healthy, live hygienically, discard vicious and harmful habits, and they will have taken the first step toward eliminating the physical

sources of vice; let them have an understanding of the causes and effects; then let them purge their minds of lust, and establish in its place thoughts of better things and clearly defined principles; and the victory is won.

XII

IDLE WIVES, UNMATED MEN, AND THE VENEREAL PERIL

THE question of sexual immorality and the venereal peril is by no means a simple one; and because of its complexity the remedy can be said to lie in no single expedient. There is the one great cause which we cannot change, nor would we if we could—the sexual instinct. There are certain social conditions, however, which may properly be regarded in the light of contributing causes, the elimination of which would constitute a long step in the direction of sexual purity. To one of these alone I desire to call attention. It is not wine, nor idleness, nor the absence of proper instruction in childhood, nor lewd companions, nor the easy accessibility and prevalence of women of moral perversity, nor the waning influence of the Church—all of which have been held accountable—but it is the social condition which postpones normal marriage.

Here again we encounter complex sociological problems. Among these the most important are the increasing complications and concomitant expenses of domestic life. Men have drifted away from the happy old habit of thinking of the wife as an helpmeet to the habit of treating her as a luxury, to be maintained at a certain necessary expense, just as one's yacht must be maintained. In the larger towns this condition is so prevalent that in many communities the most useful women are the unmarried ones, and for a woman to marry is to retire into the seraglio of pampered luxuries. There are whole blocks in our great cities in which the women are essentially useless creatures, outside of contributing to the joy of their husbands. They do not even have the elevating responsibility of caring for their own hair or feet, let alone the care of their children or households. The morning bath, the novel, the luncheon, the drive, cards, the theater—the home cannot thrive by these. Idleness in women is the beginning of trouble. It is just as bad for their morals as it is for men's—perhaps a little worse.

Every young business man who would lead the normal life has before him the goal of his aspirations in business success, which is high

and attained by few; and also the domestic outfit which goes with it, which usually remains beyond his reach; and marriage is postponed.

The household is not upon a normal basis unless the woman works and helps the man maintain it. She must be more than an object of ornamental furniture. She should be engaged in useful occupation within the limits of her strength. Employment which is not useful is idleness. If her husband can afford to keep her in idleness, it is to insult her to demand that she should live so. The woman who is idle degenerates; and her household, her children, the community, and her husband all suffer for it. He would treat his horse better than to demand idleness from it. And yet this is the state in which many young men think a wife wants to live, and few young men can afford to maintain a luxurious appurtenance of this sort, at least not until they have frittered away the most precious years of their lives making money and in discovering the dangers and incompleteness of bachelorhood.

I know a cultivated woman in one of our great cities who in her home puts in as many hours of work as she requires of her servants. She joyously labors with them, doing real acts of phys-

ical toil. She is the companion of her children, who receive from her those attentions which a mother best can give. Still usefulness does not deprive her of the pleasure of the opera, or of a participation in the organized works for social and civic betterment; and when she is heard in the discussion of social questions she speaks from real knowledge. But here is the interesting thing: When the heavens pour forth a deluge of snow, and with her ruddy boys she sallies forth, shovel in hand, to clear the paths, at the neighboring windows appear the faces of the idle women, beholding with amazement, surpassing their comprehension, the extraordinary spectacle of a lady of social station engaged in useful manual labor! It is not this particular woman who points the moral, but it is the other women for whom we are concerned. It is the fact that by education and training and by the usages of their social environment they are out of touch and sympathy with useful labor among women who might avoid it. With them it is a thing to be escaped—escaped through the agency of marriage or inheritance. And in this, society is just as cruel to them as organized labor has been to condemned prisoners—it will not let them work. The idle wives of

society are as expensive as are the idle prisoners of the state; and they degenerate just as fast, and in direct ratio to the degree of their idleness.

This condition is most prevalent in the large cities. In the country, a larger proportion of the women are useful, and for that reason marriage is less expensive. But in the city, the prevalence of the practice of marrying a woman to support her in idleness deters the young man from organizing a home; and marriage is postponed, with evil consequences.

This evil will not be overcome until the rush to the cities subsides and the country becomes economically and socially attractive. The huddled life of the city is not well adapted for man's advancement. A better prosperity is possible in the less crowded communities. The city works a hardship to both men and women. Its allurements deplete the country of the flower of its young manhood. I should not blame the spinsters of New England if they should organize and *en masse* march upon Boston, whence the boys of their childhood have gone, with banners bearing the slogan, "We demand our birthright; we demand to be loved!"

But before this desperate expedient is re-

sorted to, the growing improvements in communication and transportation will have removed from the country its objection of remoteness, and civilizing education will have made its advantages take the place of the disadvantages of the city. Then there shall be a larger proportion of productive members in the community; more productive labor for those who are now idle; more profitable leisure for those who now labor; more simple life; less wastefulness; and a better appreciation of the things that are worth while. The normal life should then be more prevalent. The social conditions of the city also should improve. It should be easier for married women to be useful. The financial burdens of the home should be reduced. The roaming about of unmated men, seeking who may devour them, should be less prevalent; and a great cause of the venereal peril overcome.

XIII

THE SOCIAL EVIL

THE discussion of sexual morality has been a much-avoided subject until very recent times. The alarming prevalence of venereal diseases called attention to the necessity for discussion. Then it was found that the people knew really little of sexual hygiene. It is to the credit of the medical profession that this question is beginning to receive the attention which its importance merits. Neglected by the Church, posing as the guardian of public and individual morality; ignored by the school, from which the child should receive the instruction which best fits him for happiness and usefulness; and avoided with prudish cowardice by the parent, whose obligation it is to point out the path by which the child should walk—this question of sexual morality has been left for elucidation to the gamins of the street and the habitués of the brothel. The first that most children learn of it is from the most vulgar of

their playmates. This most important subject is first taught by the most immoral teachers. It is to be hoped that the attention now being given it may increase in power and in results, to the end that the neglect which it has suffered may be atoned for.

The movement to educate the public upon sexual hygiene and save youth from the pitfalls of ignorance had its beginning in the study of venereal diseases and their direful consequences; and the injuries inflicted by these diseases upon the innocent have aroused the sympathies of students of this class of maladies. The committees of medical societies and the societies for sanitary and moral prophylaxis which are engaged upon these questions have before them a work of greater importance than that of the organizations for the elimination of tuberculosis.

The matter has been taken up by medical bodies and societies under medical guidance. The simple truth is all that is needed. That will make us free from the ignorance which has lain at the root of sexual sins. Sexual physiology and psychology should be *taught,* not vaguely and covertly hinted at. The fallacy of sexual necessity, promulgated by the sexual

sinner, should be replaced by the knowledge that the exercise of the sexual organs is not necessary for health. The prevalence and the direful results of venereal diseases should be known, and especially their consequences to the innocent. And, finally, the meaning of *normal marriage* should be made clear to all young men and women. Marriage can be founded neither upon sexual feeling nor platonic affection; it must combine mental and animal harmony in the divine passion of love in a man and woman, each inspired by the spirit of mutual helpfulness and a desire to bring out and develop the best qualities in the other.

The teaching of the things which are necessary for the happiness and usefulness of the child should begin at home. The responsibility rests upon the parent. This instruction should be continued in the school; and the Church and other organizations for moral instruction can well afford to devote some attention to the teaching of these helpful truths. Education is the solution of this problem.

Seduction and promiscuous sexual intercourse were not only not frowned upon, but were matters of parlor conversation as recently as the time of Addison and the *Spectator*.

Drunkenness did not exclude a man from good society as recently as the Civil War period. Tight lacing, unhealthy pallor, and piercing the ears for the purpose of hanging jewels upon them have only within the memory of the young become unpopular among cultured people. The advances of civilization have eliminated these. The period now dawning is to be characterized by the promotion of happiness through the care and perfection of the human body. We are to recover from the two thousand years of neglect of the flesh. And, in the interest of sexual health and morality, it is surely not too much to hope that public opinion will, during this twentieth century, place its stamp of disapproval upon the inequality of sexual privilege now prevalent, and demand from the man the same measure of virtue as it does from the woman.

XIV

EDUCATION AND THE HEALTH AND EFFICIENCY OF GIRLS

MANY girls return from school or college in a bad state of health and in need of vacation. Many girls grow robust while in school. The former is all too common; the latter, too seldom. Education, if it is worth being called education, conduces to good health. This is not yet freely admitted, but some day it will be. There was never a time when learning things that have been written was better than being well.

Our systems of feminine education have not yet reached a point in their development when they have much to offer beyond a smattering knowledge of certain more or less useful, or useless, facts and theories. If a girl belongs to that class of young women engaged in preparing for college, she is made to consume some of the most precious years of her life memorizing much that will never be of use to her or

ever again called for after she has passed her entrance examinations. It really has not been history and mathematics that she has been cultivating, but her memory. These girls are neglecting to study the things that will prepare them for life. Not life, but the college seems their goal. In college the girl studies more thoughtfully, but she is taught to give little attention to the things of real importance to her. The educating process to which the modern college girl is subjected is not so much directed to make her efficient, observant, original, resourceful, self-reliant, and thoughtful, as it is to make others think that she is. And while she is learning the merits of "Paradise Lost," the intrigues of the English kings, the names of the several members of the family of Stuart, the ramifications of the Greek verbs, the distinctions between the Elizabethan and the Lake School of poetry, and the psychology of impulses, often the roses of her cheeks are perishing and her eyes are taking on the dreamy, far-away look of neurotic culture.

Herbert Spencer wisely suggested that should we suddenly become an extinct race, and should some future investigator find our schoolbooks, he would think that he had discovered a

race of celibates who were interested in everything but their own lives, happiness, and perpetuation. The fact that between forty and fifty per cent of the women admitted to the hospitals for the insane in our Eastern States belong to the class which is spoken of as "well educated," cannot in itself be taken as a reflection upon the work of the schools; but it does indicate that something is wrong with their manner of life to bring them to this unfortunate state; and while we cannot say that stress of study is an etiological factor, we can say that their education should have been more in the lines of helping them to a state of harmony with their environment, for want of which they have become deranged, and that they have frittered away precious study days in chasing the silly baubles of classic culture.

If after leaving school young women indulge in practices which are injurious to health, and therefore to happiness, it is quite evident that they have not learned the best things. The appreciation of the best things in life is happily growing; but unconscionably slowly. The study of expurgated physiology, a few lectures on hygiene—how to ventilate a room, the harm of tight lacing, the value of sleep, the importance

of discretion in diet, and kindred subjects—will not make schoolgirls healthy. Self-preservation and perpetuation is a bigger subject than primary hygiene. It involves all of the functions of the mind as well as the body. It involves all of the day of work and play and sleep. It is the most important thing for young women to study. But in our schools and colleges it is as yet imperfectly grasped. What is the most important function of a woman? Surely it is to be a wife and mother. What does the school or college teach her that prepares her for these functions? But little. To most so-called cultivated girls wifehood and motherhood are surrounded by clouds of sentiment and mystery. But the day comes when they resolve themselves into stern realities. The households are few in which the inadequacies of the wife and mother might not have been remedied by previous education. Few are the daughters who can teach their mothers anything of domestic economy, compared with the many who excel their mothers in knowledge of the doings of Henry VIII.

When we begin to educate young women in the vital things of life many of the difficult social problems will be answered, and we shall not

find so much that is pertinent in the questions, What shall we do with our girls? Why do American marriages fail? Why do American mothers fail?

It is a fact that in a large number of our colleges, study of the Bible is compulsory, but the study of biology and the other natural sciences is optional. Is it to be wondered at that the great cause of sexual sin is found to be in defective education, and that the most effective remedy is discovered to be the simple teaching of facts?

It is actually true that girls in our schools listen to instructors prate of the infinite when their grasp of the finite is so meager that if they were cast away on a desert island they would perish of hunger and thirst in the midst of plenty. There is much that answers to the name of education, which, instead of preparing young women for life, is contributing to their undoing. The one line in which they are least learned is that of the natural sciences, which deal with the things that surround us and which are known. The study of the natural sciences is the most profitable and cultivating. It helps the mind and the body; and so long as it continues to be slighted, young women will lack sal-

utary education. It is the one line of study that will save their health and preserve them from the pitfalls of mysticism and the cults of mental obliquity. Next to this in importance is the study of the domestic arts and sciences—the homely household things that contribute to the rounding of a wife and mother. Along with these should go training in accuracy and originality, observation and thoughtfulness.

XV

PHYSICAL FITNESS AT THE THROTTLE

AN important matter which might wisely be under medical supervision is that of the physical fitness of persons engaged in occupations in which many lives depend upon the good physical condition of an individual. The Government, for example, supervises the traffic rates and the finances of railroads, but takes little cognizance of the lives of the people who travel on them. It would seem that money is more important than human lives. The railroads give some attention to the matter, but neither in a scientific or disinterested way: they take the precautions which give a money value return.

The engineer of a passenger train fell unconscious at his post and his train collided with a switch engine with disastrous results. Another engineer was overcome with heat, presumably, and fell unconscious at the throttle, the fireman discovering the accident in time to

stop the train. The same week an engineer on a freight train, after convalescence from a sickness, became suddenly insane, and ran his train at a high speed to escape an imaginary evil pursuer, until he was overpowered by the fireman and a brakeman. These three instances occurred all in one section of the country, and all within a period of three weeks.

It is well known that in many of the frightful railway wrecks, in which many lives are sacrificed, the accident has been due to the physical disability of some important person. The failure to set a switch, to recognize the color of a light, or to fail in some other act on account of physical defect has been responsible. This is too important a matter to be left to the corporations, which have only a financial interest: it should be under governmental control. A railroad is violating a law if it is carrying freight for one party for a cent or two less than for another, but it is violating no law if a paretic engineer is rushing a train load of people to destruction.

The same is true of all passenger-carrying enterprises. The physical fitness of officers of steamboats should be supervised by the state,

not alone by the corporations. The eyes of motormen are tested in a perfunctory sort of way, but the motorman may have nephritis or diabetes or arteriosclerosis and drop down at a critical time. It is a fact that in one of our large cities these positions are being taken by men who have been found physically defective for the police and fire departments.

The automobile rushes through the streets and country in the hands of anyone who puts himself to the task. The number of accidents is appalling. The driver may be half blind, deaf, or paretic—there is no restriction. The large number of fatalities are all in the day's work, so long as we do not know the parties involved; but still we may be the next victims, and then it becomes a different matter. No person who has not been subjected to a physical examination and determined physically fit and free from disease which does or might suddenly incapacitate him should be permitted to run an automobile faster than four miles an hour within the town limits. A medical examination should be necessary for a license, and the license should be good for one year. This need not be burdensome or expensive, and it would

surely be for the public good. The antipaternalist might object to such an ordinance, but after he is run into by a cross-eyed paretic he will be convinced of its value, if he survive the experience.

XVI

THE ACCIDENTS OF SUMMER

THE newspapers and the medical press are prone to call attention to the "accidents of summer," and it is not to be gainsaid that an appalling number of misfortunes and fatalities mark the summer holidays. In the cities, each Sunday or holiday has its calamities; and the country and seashore every day report disasters which have overtaken the seekers after summer rest and recreation. These accidents and deaths are particularly pitiful, and even dramatic, because they occur in the midst of merrymaking and happiness, and not in the presence of grim and dangerous occupations. Many reasons have been assigned in a general way for these misfortunes, but all have been subsidiary. I have never seen the real reason assigned. Possibly, because it is so simple, it has been overlooked. Briefly, the explanation is to be found in the tendency of persons engaged in strenuous business life,

when the opportunity for a short vacation presents itself, to seek some diversion which is totally different from their daily occupation, and to apply the same strenuous efforts to "having a good time" as they apply to their everyday vocation. This can never be done with safety.

A mill hand works for fifty weeks with his dangerous machinery and is not hurt, because he is familiar with it; but when he steps in a catboat and gets mixed up with the tides and weather, trying to have enough fun in two weeks to last him the rest of the year, David Jones is waiting for him. And, on the other hand, the fellow who sails a boat all the year had better keep his fingers out of the wheels of the mill.

For eleven months the pale-faced bank clerk has grown soft and flabby with his eye on his ledger page. He has had his cocktail before dinner, and at night over his pipe has sat about the grill-room camp fire and dilated upon the merits of smokeless powder, while the hands of the tall clock in the corner have become scarcely visible through the thickening smoke. His oculist adds a diopter or two to his glasses; and in the late fall he packs his paraphernalia and

plunges into the woods. He tries to make himself look like a half-breed, and thinks that he does; but his guide smiles a deep smile that shows not on his placid face. Now, if you look any more like a deer than a well curb does, my advice to you is to keep out of the banker's range, or there may be another of these "accidents of the summer." And the native woodsman would make just as bad a mess at figuring discounts.

The prince of the ballroom and the afternoon tea never really has an opportunity to display his manliness until he gets into his bathing suit. The undertow and a breaker or two start in to eat him up, and they get away with him so far that Sylvester's method, for three steady hours, leaves him cold and limp. And the tough old life guard would cut a sorry figure in the cotillion.

The mistake made by our summer vacationist is to plunge into vacation with the confidence of vocation; and in these strenuous days there is too wide a distance for safety between the two.

The cheap seaside resorts vie with one another to furnish their patrons with new sensations; and the frequenters of these places get

so much for a small outlay of money that they find the attractions irresistible. All sorts of death-inviting devices shoot people like catapults down grades, up grades, and through the air. The ingenuity that has been expended in contriving machines to give people, in the bloom of health, an opportunity of coming up to the death line, almost to the crossing place, feeling the cool breath of eternity, and then receding in the exhilaration of safety, would solve many a human problem if applied to that end. Unfortunately, the insanity of amusements of our seaside resorts does not give recreation. Most of the patrons of Coney Island find themselves worse off for it on Monday morning. It involves more nervous strain and excitement than exists in their everyday work, and many more dangers, as experience has shown.

Thousands of employees work hard all the year, and have a vacation of two weeks in July or August. This vacation is an event, and well it should be, for their labors have earned them two weeks many times over. It is prepared for and thought about, and a good time must be had at any cost. The "good time" too often consists in endeavoring to crowd into that

short space a succession of events which should have been distributed more equably through the year. The vacationist often works more strenuously at having a good time than he does at earning his livelihood.

All of these conditions cause an approach to the danger line in vacation time; and behind it all lies the strenuous life. While the habits of the people and our social and economic conditions are slow to change, it is always to be hoped that society may yet organize itself so that its affairs may move along more smoothly. The labors of the men and women who toil should so be regulated that recreation is intermingled with work in wholesome proportions. No country or people in the world are so deficient in the practice of sensibly interspersing labor with play as the Americans. The average American, who is fighting his way to business success, does not know how to play or to take recreation. The people of the Old World are so superior to us in this that we might wisely sit at their feet and learn how to play and how to relax. The real spirit of the *Landpartie*, the outing of the Germans, or of the *jour de fête* of the French has never been developed on American soil. We lack appreciation of restful pleasures.

There is little that the law can do. It is not a matter of throwing more safeguards about the people, as is suggested. The defect is manifestly a fundamental one, and lies in our sociologic economic conditions.

XVII

LIFE-INSURANCE INTERESTS

WHILE we look askance at some of the methods of the life-insurance companies and, indeed, discover that many engage in practices which are incompatible with high ethical ideals, we cannot lose sight of the immense service which these organizations render to the public. Life insurance is a well-recognized and approved business, without any more philanthropy in it than any other business has; and we should be glad that as a business it is a success. It is not upon the fact that it provides a means by which we can insure our families against the contingencies of the future that I desire to comment, but it is its indirect service to the whole people in calling attention to the value of good health that should not be lost sight of.

The life-insurance companies are doing much to interest men in their own lives and in the

lives of their families; and anything which accomplishes that is of salutary influence. They are a powerful and practical agency for reminding people of matters of health and longevity. Men with bad habits and excesses are refused insurance, and such refusals have a good educational effect. Plant in a man's heart a deep regret that he has lived unwisely and he becomes a torchbearer, often unwittingly, to warn others away from his unwisdom. The insurance companies also desire as examiners the competent men of the community, the effect of this being that wholesome competition and examination ensue.

There still remains for these organizations to combine in a concerted action to secure better general health conditions. Just as the fire-insurance companies combine in the support of the salvage corps, and in watchfulness over the efficiency of the municipal fire departments, so the life-insurance interests have an opportunity as a clear business matter to join hands with the medical profession and sanitarians in the great movements which are in progress for the improvement of the public health. If in inhibiting the development of epidemics the medical profession is taking bread from itself,

this could not be said of the life-insurance interests. They can, as a matter of plain business policy, give every aid to medicine in its philanthropic efforts. The life-insurance companies could wisely take the same interest and lend aid in the work of health departments as the fire-insurance companies do in the work of fire departments. No single financial interest should be more deeply concerned for the public health; and none can with greater pecuniary profit engage in the movement to secure the establishment of a national department of health.

XVIII

UNHYGIENIC IMMUNITY

IMMUNITY against almost any condition which threatens health may be acquired. There are certain fundamental things which general scientific opinion is agreed upon. It is agreed that pure water and pure air are better for the health than impure water and impure air; and the advance of civilization has resulted in the general acceptance of these beliefs. However, an immunity against many of the impurities existing in air and water may be acquired. It is well known that races which live in conditions which to us would be squalor, drinking and eating dirty foods, enjoy an immunity from the dangers of filth and thrive under conditions which would be fatal to the more cleanly races. Intestinal infections which give the natives of the tropics little trouble are fatal to the English soldiers. The people of some of the southern countries of Europe eat meat in a state of decay that would prostrate the northern Euro-

pean. One can cultivate an immunity for ptomaines as well as for alcohol and tobacco.

What is true of insults to the gastrointestinal tract is also true of the respiratory tract. The Eskimos in the winter shut themselves in and breathe over and over again the vitiated air from their own lungs, living practically in a state of hibernation; yet this practice has existed so long that they have acquired an immunity to their own bad air; but transported to temperate climates and surrounded by conditions which seem more hygienic, they are prone to contract consumption and die. It is reported from Panama that the negroes of the West Indies are suffering a high degree of mortality, although they are compelled to live under apparently good conditions. These negroes in their native state live in filth and bad air, yet they perish under the conditions which, theoretically, should be favorable.

On the other side we have a still different picture. It is true that the strongest and most healthy persons often are made ill by violations of hygiene which the less robust endure without complaint. I know of persons who live according to the most advanced knowledge of hygiene, sleeping in the open air,

and living out of doors practically day and night, who suffer from oppression of breathing, headache, and even nausea, in the vitiated air of a theater or church, while the weakly shopkeeper or clerk, who spends most of his time in a vitiated atmosphere, is comfortable and blithe.

Thus, there are penalties for the healthy as well as for the sickly. The human organism suffers temporarily from any sudden change into new conditions from old conditions under which it has thrived, whether it be for better or for worse; and it is capable of developing an immunity to poisonous materials, either inhaled or ingested, provided that the immunizing process is approached gradually. This power to become immune to the constant assaults of poisons is a part of the great organic law which has enabled animal life to endure, and which has contributed to the differentiation of species.

XIX

FRESH AIR

FRESH air, in distinction from air that is not fresh, is simply the ordinary out-of-door air in contrast with the ordinary indoor air. The latter contains less moisture; it has had oxygen removed by animal respiration and by combustion; it has had added to it the products of these chemical changes; and there are presumably other changes the nature of which we do not know. Some day the chemist will be able to define the exact differences in the composition and structure of the two airs. At present we do not know much about it from the chemical and physical standpoint; but from the practical and clinical standpoint much has been learned.

The greatest appreciation of the value of fresh air came through the study of consumption. It was observed that for a person who had contracted this disease to live as other people lived meant death. The consumptive

does not do well when he continues in the same habits as are followed by all of the candidates for consumption. The observation that people with this disease recovered if they lived in the fresh air and died if they lived in the ordinary indoor air, has been one of the most important discoveries that man has made. Its importance has not yet been realized; but it is destined to be of great human service.

The most important food that we consume is air; the next in importance is water, and the next is the product of the grocery shop. Man can live without the latter for three weeks; without the next for one week; and without the former for three minutes. Air is the cheapest, the most abundant, and the most essential. We have given much attention to pure groceries; and we should be loath to consume over again what some one else has ejected. We have more recently awakened to the importance of pure water; and the harm of ingesting water which some one else has used is well understood. But there is as yet inadequate consideration given to the prevalent practice of taking into our own lungs the sewage of other lungs. The consumptive has learned that it is not good for him; the next person who should learn it is the noncon-

sumptive. It was not many years ago that only the sickly and delicate were particular about the water they drank. They noticed that sickness developed if they took water that was not pure. The robust were ashamed to complain of dirty water. They thought their constitution would stand most anything. But it was learned that dirty water contained materials which had the power of weakening the strong. Now everybody demands clean water. We have learned many of our best lessons from the sick. We first paid heed to their food; we washed them and kept them clean. Then it became the custom for the well to pay attention to their own food, and for the well to wash and keep clean before they became sick. The demand for fresh air is going to grow up in the same way.

A great many diseases have been found to be caused or encouraged by improper food and unclean water. It is difficult to determine which was the first. It is a coincidence that consumption was the first to be identified as being associated with bad air. The rest of man's maladies will follow. Already tuberculosis of the bones and joints in children is being treated in the open air with beneficial results that promise even to surpass those secured in con-

sumption. Hundreds of these children are being cured because the hospitals are taking them out of the wards and putting them on the roofs and balconies. Pneumonia patients are receiving the same beneficent consideration; and the mortality of the disease is being lowered. The mortality in the treatment of typhoid fever was never so low as it was among the soldiers who lay sick in tents during the Spanish-American War. The insane and neurotic recover in the open air, when they used to perish in their cells. The modern sanitarium in a beautiful country which invites the sick out of doors is bound to give results, because the patients are brought from the indoors. Fresh air is not only important for these classes of unfortunates, but it remains to be applied to all illnesses, surgical as well as medical. Then it will be observed that it is no treatment at all.

Properly speaking, the application of fresh air to tuberculosis of the lungs is not a treatment—it is simply giving the lungs what they are intended by nature to have. Tuberculosis infection becomes implanted and grows in lungs which are fed upon impure air. Making the patient live out of doors is a return to the natural and normal requirements of the respira-

tory apparatus. When one has become ill from impure food, he is cured by giving healthful food. When one is made ill by breathing illuminating gas, the first step in the treatment is to give pure air. The first essential in the treatment of a consumptive is to take him out of the house; just the same as the first essential in the treatment of a drowning man is to take him out of the water. When primitive peoples become sufficiently "civilized" to live in houses, the same misfortune overtakes them that overtakes the simian removed from his jungle to the museum: they contract pulmonary disease.

When a fisherman on Cape Cod contracts pneumonia, they often put him in a little bedroom which is nearly as air-tight as though it had been calked. He has been used to wind and weather all his life, and his wife often harbors the notion that that is what brought on his pneumonia. The blinds are closed; and in the sick room you will find an old nurse fanning the patient, and a veritable young stove of a kerosene lamp eating up the oxygen.

The mortality from pneumonia among these men is extremely high. When the doctor arrives (he has driven five or ten miles through

a wind that has nearly taken his breath away) he goes in the house, and is thankful enough to find a good shelter. It is the most comfortable place he has been in since he left the last house, an hour before. If he should suggest more air for the patient, his orders would not be carried out. This is what happens to the old fisherman: he dies.

It is curious enough that a dry-goods clerk would stand a better chance of recovery under these circumstances than the fisherman, for nature bestows a certain measure of immunity against bad air upon those who habitually live in it. By practice the diver can remain longer and longer under water. A man may accustom himself, at the expense of his health, to get along with less oxygen and more carbon dioxide. This habituation stands him in good stead when he has to be shut up in a room with a quarter or a half of his oxygen-absorbing apparatus put out of commission. But our fisherman, whose bellows has been blown up with wind from every point of the compass, has not had the immunity to bad air which our dry-goods clerk has enjoyed, and when his oxygen is shut off he dies like a rat under a bell-jar.

Breathing fresh air improves the health and

resistance of anyone who is habitually without it, and that means pretty nearly everybody. Fresh air increases the resistance of those with consumption. It also does the same for those without consumption and for those with other diseases, chief among which is that great symptom complex from which most indoor dwellers suffer and which, for want of a better name, we may call stuffiness, due to the breathing of vitiated air. To advise continuous fresh air for the consumptive alone is hardly fair to those who are still doing their full day's work without complaint—they need it, too. Let us not neglect them while they are yet not consumptives.

Out of this study of consumption is destined to develop, first the appreciation of the value of fresh air to the sick, and then to the well. And when the well grasp the significance of this, humanity will have taken one of its longest strides forward upon the road of hygiene. This is but one of the benefits that consumption confers. The gaunt form of the great white plague stalks at the head of the procession, and leads the way to the open air.

Physicians who have most carefully studied the nature of the ordinary cold tell us that the people who live close to nature are exempt. It

is the denizen of the city, surrounded with the luxuries, who suffers the most. Vitiated air and the contrivances that he buys to keep away the *cold* are responsible for his *colds*. The woodsman, who lives and works in the open and sleeps in a freezing hut, enjoys immunity.

The sufferers from colds are those who spend a large part of the winter time in an unnatural atmosphere. The air in offices, stores, theaters, factories, and dwellings in this climate is bad. Its temperature is usually higher than is consistent with good health; each occupant inhales the materials that have come out of some one else's lungs; and the percentage of moisture in the air is below the normal. These are due to the defects of the modern heating appliances. It is a long step backward, so far as healthfulness goes, from the fireplace of our ancestors to the steam-heated radiator.

Of all the iniquitous machinery that has ever been contrived to destroy the weaklings and emasculate the strong, this radiator stands preeminent. Here is a thing which can be put in a room, and the more tightly the room is sealed against the inlet and egress of air the more effective it is and the more it is vaunted as a successful heater. The furnace, which was cast

out to give place to this thing, is eminently more rational. Every cubic foot of air from the furnace that enters a room displaces a cubic foot; it will not work unless there is ventilation. And the old-fashioned stove and the fireplace all demand ventilation; but the radiator works best without it. The ideal heating system to supply fresh air is that by which outdoor air is conducted directly into closed boxes in the basement containing steam radiators and pans exposing a large surface of water for evaporation. From these boxes the fresh air, heated by contact with the radiators and carrying the moisture evaporated from the pans of water, is then conducted through large hot-air pipes and delivered to the rooms through registers.

The intolerable heating iniquities, not to be considered, are the gas stove and the oil stove, which when inclosed in a room consume the oxygen and throw out in its place their noxious products.

Most modern heating apparatuses, we are shown, possess the disadvantage that they dry the air. Examination of the air of rooms in the winter reveals from five to thirty per cent less moisture than is present in the normal outdoor air. Our indoors winter population lives

in an atmosphere so far below the point of saturation that evaporation is constantly and more rapidly than normal taking place from the skin and respiratory mucous membranes. A result of this evaporation is a sensation of coolness. It is not uncommon to find in an office a temperature of seventy or seventy-five degrees, or even higher, and yet a sensation of chilliness when the moisture is low; whereas in a kitchen, with boiling pots on the stove, a much lower temperature imparts a decided sense of warmth to the skin. It has been shown that persons breathing abnormally dry warm air have the vital resisting power of their respiratory mucous membranes decidedly lowered and rendered susceptible to the complex of phenomena designated as cold. Thus we find in our modern system for preventing coldness the conditions conducing to colds.

As heating materials become more expensive, greater economy in conserving the heat in buildings is practiced. This is done by minimizing the amount of fresh air which is allowed the tenants. Colds are the result. Colds are prevalent in winter, the best authorities inform us, not directly because of the cold, but because that is the season when people shut themselves

in and breathe bad air. Persons who have enjoyed pure air all the summer, habitually reverse their practice and give themselves pure air in winter only when they are out of doors. As a matter of fact, cold air is better to breathe than warm air, even though equally pure. It is more concentrated. Every inhalation of cold air gives one more oxygen than an inhalation of warm air.

The lessons which we learn from the consideration of these medical teachings are, that we should inure ourselves to the cold of winter, that we should court the fresh air, and that in heating our houses it should be done by means which give ventilation and moisture. Thoreau said that he loved the cold when it chilled his skin; he was like an oak tree—it did him no harm because he was always in the air, be it warm or cold.

Gould, in discussing the seven deadly sins of civilization, classes the modern house among them. The modern house is probably not so guilty as the way in which we abuse it. It is pretty generally constructed so as to protect the inmates from the weather, but the inmates have perverted it to shutting out the benefits of air and light and to shutting themselves up

with the unwholesome emanations of their own bodies. The house cannot be classed as a great evil, but man's habits in the house can. Information upon this important matter is easily to be had. Let one walk the streets at night and he will be able to recognize the bedrooms by noting which windows are most tightly closed. In the city whole blocks may be observed in which the bedrooms are easily discernible by closed sashes, blinds, and shades. Sometimes a window will be seen to be open a few inches, but this is exceptional even in spring and fall when the air is not cold. Another interesting study, this time in psychology, may be made; for, if the dwellers in these rooms are questioned, they will declare that "we are great fresh-air cranks at our house." Bad air is responsible for some remarkable assaults upon the truth. These people are victims simply of traditions, examples, and habits —all hard things to overcome.

One of the points in which there is a gross misconception as to the function of the house is that it is to hold air to keep the body warm. The tendency in the winter is to treat the air of the house as though its first use were for its warmth, when really its first use is for breath-

ing. The first concern should be that the air is pure; and any warmth that is not consistent with that is not worth having. Clothes and good skin reaction should be relied upon for the warmth of the surface of the body. The air is for food, and it is too precious to be used for clothing.

If we have to work indoors, we can at least sleep out of doors during the eight hours that are not required to be sacrificed to society. Some few people who are not sick do it just for the joy of it. They like to awaken in the morning, after eight hours in the open, with an appetite for breakfast, and feeling as though they had just returned from a vacation in the country. Acres of roofs and balconies in the cities are going to waste. Some day they will be utilized and the dwellers in the caverns will come forth and sleep under the canopy of heaven. The day will come when outdoor sleeping facilities will be provided in every house that is built, just as bathing and toilet facilities are now provided. But before that day there is much educational work to be done. Many superstitions and traditions are to be overcome. The bugaboo of "night air" is to be disposed of. People are to be taught that that is the only kind of

air there is to breathe at night. The problem of outdoor beds and awnings is simple. It is difficult only in the mind of the inexperienced.

Children always excite our sympathy more than adults; and naturally, too, because they are not altogether free. They are both beneficiaries and victims. I confess that I know but few that are not the victims of bad air. Here is a little girl who presses her pale face against the pane, but is not allowed out because it is "too cold" or "too damp" or because she has "a cold." She is in the house for one or the other of these reasons most of the winter. In the summer she is out of doors, and consequently begins the winter with fair health. She sleeps in a bedroom heated by a radiator. The window is open two inches at the bottom. About her crib is a barrier to protect her from the draughts. The air is so close and warm that she sleeps restlessly. Diseased tonsils and adenoids have naturally developed. The question is: Where is the culpability? And the answer is: In the education of the parents. Nor would I altogether excuse the medical profession from the blame. There is yet much to learn concerning some of these simples of health.

The mother whose child perspires at night and cannot be kept covered, and who offers this as the reason for depriving the child of fresh air when the perspiring and restlessness both are due to the withholding of fresh air, may be regarded as an educated woman, but the sort that she possesses should really not pass current under the holy name of education. Air is to breathe, not to wear; and the mother who has not the ingenuity to cover her babe at night so that it may have freedom to roll and still remain covered, should cancel all other engagements and roam the world until she finds the mother who can teach her, and then sit at her feet and learn a lesson of more significance than anything that her professor of English literature ever taught her. I know a simple woman, the wife of a laborer, whose babe slept day and night in a clothes basket on the fire escape. A big umbrella from a delivery truck, proclaiming the merits of a brand of soap, kept off the rain and snow. When the babe outgrew this bed, a shallow packing box took its place, protected on the north by a barrier of muslin. This is the only really rugged, happy infant in the apartment. The others get into the fresh air when some one takes the trouble to dress

them up and push them through the streets in a carriage, which is not often, because it involves too much labor and the time of an extra adult. There are women with pallid children who are deeply concerned with "improving the condition of the poor," who might with profit learn from this woman of simple culture much for improving the condition of the rich. One of the most inspiring conditions with which I am familiar is that of a family of six, with children ranging from one to five years of age, in the heart of a great city, going to bed at night on the roof, in all the seasons of the year. The problem of awnings to keep off the rain, snow, and wind have been simply solved, but usually the starry heaven is their roof. Some interesting facts attach to these conditions: The children in the appearance of healthfulness are so different from the other children of the city that they look like a different strange and rugged race; they eat simple foods and have no whims of daintiness; they would regard it as a punishment to be made to sleep indoors; they know something of the stars and moon and have a wider outlook upon the great universe about them; and their mother finds little in common with those who speak of the care of children as

a dragging responsibility, for the rearing of children to her is not a care but a joy. There are many groups of children which have the same intelligence applied to their feeding and to all the other conditions of their lives, and still they are a source of much care and anxiety. The one simple thing that makes this difference between care and joy is the open air.

I do not know that adults who sleep out of doors, aside from their freedom from colds, are much different from other adults, but children are decidedly different. I once heard Judge Lindsey say that a judge in a neighboring State gave up treating with clement consideration youthful offenders against the law, because he had once tried it and the boy had run away. This is about the same attitude as that possessed by the man who said that he once tried sleeping with his windows open and he caught a cold that lasted him all winter. Both of these cases illustrate that a certain amount of intelligence must be brought to bear even upon these simple problems. When a mother says that her children, products of the hothouse, cannot sleep out of doors because they are not rugged enough, she confesses that she has not applied

the stint of intelligence to the case which its importance merits.

For the adult, the best of sleeping under the open sky is really not hygiene. After all, the best thing is just the joy of it. To lie down to sleep at night with ten thousand other worlds in sight, all moving noiselessly and majestically upon their eternal errands, the greatness and peacefulness of it all enters into one's own spirit and shuts out the petty affairs of the little world. One feels that he is clasped more closely in the tender embrace of the great universal mother of all things. Sweet air bathes his lungs; the sounds of the world grow fainter; and to the music of the stars he drops into slumber. Then the sun god comes and paints the objects all about with gold; brown chimneys look like minarets of the temple; the fleecy clouds quicken their flight; the birds are on the wing; and the day has awakened. High in the air the belly of a gull shines like a cuirass of silver, as it beats the air with glistening wings that seem to splash a golden spray. The long, serpentine chain in the sky swiftly moving to the north proclaims the spring prophecy of migrating ducks. It is a great thing for one to feel that he is a part

of nature as well as of the busy community of selfish men. It broadens him immeasurably.

Go out into the air; do not despise it because it is cheap and plentiful; bathe your body in it; absorb it into your blood; and it will bless you with the benediction of health.

XX

CHRISTIAN SCIENCE

"There is in our mind nothing that has not been in our senses."—MOLESCHOTT.

CHRISTIAN science is performing a distinct function. It is filling with optimism the hearts of many people who have been racked with unsatisfied longings, disappointments, and distress. It has bestowed upon them a beneficent *laissez faire.* Nothing matters. Berkeley failed to secure a following because he attempted an appeal to the intellect. The founder of Christian science succeeded because she appealed to the superstitions, and to self-interest.

This doctrine is not to be feared, because the cultured mind is not susceptible to its influences. Those who adopt it are possessed already of unnatural delusions or are deficient in knowledge of the nature of things. Two conditions exclude this dogma: good mental poise, and familiarity with the natural sciences.

The peculiarity of Christian science is that it recognizes no evil; nothing ill can befall one; all is good and to be greeted benignly and with a smile of approval; whereas the wise man believes that life is a mixture of good and ill. While there is much happiness, there is also much unhappiness. Those who are helping humanity are striving to increase the amount of happiness and diminish the amount of unhappiness; and they are succeeding fairly well. But it is a slow and hard struggle. Reducing infant mortality; diminishing the hazard of childbirth; saving the wounded; making the hazardous occupations more safe; securing more hygienic dwellings for the poor; lowering the morbidity from tuberculosis, typhoid fever, cholera, and plague; and minimizing by arbitration the danger of war—these are a few of the things which occupy humanity. But in these efforts to make life sweeter, in the movements which constitute civilization itself, no help can be expected from the unnatural person who denies that there is any evil to fight. The infant may be fed infected food—it is not sick. The woman in labor needs no skilled attention —she will not bleed or become infected. The wounded need not have his wound cleansed—

dirt can do him no harm. The miner descending into the earth need not concern himself if the rope is decayed—if it breaks, the fall will not injure him. The poor may live without sunshine or fresh air in their rooms—all is good. The tuberculous may expectorate where his sputum enters our food—but we shall not contract tuberculosis. Sewage may flow into our well—but typhoid will pass us by. The cholera and plague need not be quarantined against—they will not enter our ports. Men may go to war—the enemy will do them no harm. Thus says Christian science. But history and science and all our senses tell us that by giving heed to these things, lives have been saved and happiness added to man's lot.

Christian science recognizes all the good in life, and makes the most of it, which is, indeed, most admirable; but I charge this unnatural system with turning its back upon the world's cry of pain. The suffering and distressed we have with us; bodies deformed, diseased, and racked with pain are here; women are being led into lives of shame; tender children are wasting in our mills; the innocent are contracting preventable diseases; victims of pestilence, disaster, shipwreck, and earthquake are

crying for help. The agony of a man with nerves caught in a machine should excite our desire to extricate him; and the agony of one whose nerve is compressed by a minute infection which can be seen only by the microscope should excite our desire to give relief. But the relief of neither of these is by sweet smiles and assurances that there is no pain. We can offer the sufferer something better.

I charge this unnatural system with cruelty. I have seen the sufferings of the unfortunate dupes of this delusion. I have seen the hand withheld that should have plucked the burning iron from the breast. I have seen them racked with pain till their faces were distorted, while through their tears they feebly murmured, "There is no pain." I have seen them sink into unconsciousness and die; and heard the weeping orphans told, "He is not dead." It does not ease suffering or change conditions to stand idly by and say that the conditions do not exist.

Christian science is a feminine institution and displays the weakest side of woman. The Christian scientist recognizes a hole in the ground, but not the cavity in a tuberculous lung. Tens of thousands of autopsies have shown these cavities, but the Christian scientist has

not seen them. If a telephone wire is eaten in two by rust, she will confess that she ceases to hear the voice at the other end of the wire; but if a diseased condition causes the decay and breaking of the continuity of a nerve, she denies that the muscles supplied by that nerve are paralyzed. The Christian scientist has resurrected the teaching, promulgated nineteen hundred years ago, to "Take no thought of your life, what ye shall eat or what ye shall drink, nor yet of your body." However, she is fond of the good things of the table, not oblivious to the bad, and I should not like to try the experiment of administering to her unbeknown either prussiate of potash or a culture of typhoid bacilli. While she insists that the effects of such things are entirely mental, one of the most instructive experiments that I have ever witnessed was to see a member of this cult empty her stomach in response to an hypodermic injection of one tenth of a grain of apomorphine. Not all is mind; there is much matter.

It may be that when the plague swept over Europe in the sixteenth century the twenty million people who sickened and died had an imaginary disease. It may be that the flames that leaped up about the victims of the Inquisition

did not burn them. It may be that the pock-marked population of England before the days of vaccination had had no disease. It may be that the thousands who died with hospital gangrene before the time of antiseptic surgery were deluded into thinking that their wounds were infected. It may be that the 200,000 who perished in the earthquake in Italy in 1909 were deluded into thinking that there was an earthquake. But the well-balanced and the educated mind knows that these things occurred, and that man is an animal subject to physical laws that govern matter. He falls like a stone, responsive to gravity. His albuminous structures undergo changes and decay like those of a rat.

Physicians know that the great majority of diseases are self-limiting and self-curing. Natural history teaches this. Were it not so, the race of man would have become extinct. In not one case in ten does an educated physician expect to limit to any very considerable degree the course of a disease. But what he is able to do is to relieve symptoms, make the sufferer comfortable, aid Nature in the direction that she is taking to cure the malady, thwart Nature when her tendency is toward aggravation of the dis-

ease, and then in the one case in ten or twenty or more he is able by his ministrations to turn the fatal tendency of a disease toward recovery and save a human life. But this is not the best that the physician is doing. He is studying the nature and effects of the organisms which find entrance into our bodies and produce changes there, just as the arboriculturist studies the parasites of our fruit trees, or the geologist studies the coral islands. He is finding means of combating these parasites. He is learning and teaching how to recognize diseases and how to prevent them. It is an important thing for a person to know whether he has a disease, and what it is. As a result of medical knowledge and medical administration, fewer people are dying. There are thousands of earnest men the world over giving their lives to these ends. Might it not be pertinent to inquire what is this cult of strange people called Christian scientists contributing to human knowledge? Are there any laboratories where they are seeking to add a fact to human wisdom? Have they discovered any of the great truths of nature on account of our ignorance of which we suffer? Man was once so ignorant of natural science that he was persecuted by superstitions day and

night. There is much still to be learned. Are these people helping to gain knowledge of the things that differentiate us from the beasts? The answer which they give to these questions is that, all is good; we need not learn anything of the things that harm us, no harm can come if the mind wills it not to come; there is no sickness, pain, or death. They philosophize with wishes instead of with facts. They rise above knowledge, and their attitude toward science is one of supercilious contempt. They say, "A drug cannot of itself go to the brain or affect cerebral conditions in any manner whatever." But what do they know about it? Have they tried the experiment upon men or upon animals? Have they studied experimentally the effects of morphine? With the Christian scientists thought is the thing. But they fail to realize that the thoughts which have helped mind to conquer matter have been the thoughts of such men as have produced the steam engine, and harness electricity for our uses, and not the thoughts that emanate from the ignorant or from the easy-chair, and which are concerning the mind and come back to the mind again. The history of the Middle Ages has taught us that the tendency to exalt the soul to the neg-

lect of the body is ever fraught with danger. The mental healers' use of the word "thought" is with little idea of its real meaning. Her mind may be stored with vagaries, which she recalls and repeats, but she is not prone to originate a thought. Such mental processes are in nowise comparable to the thoughts of Darwin, Tyndall, or Edison, who think of facts and things because they have seen them, not simply of mind.

Persons whose minds are susceptible to these vagaries are still in the childhood stage of mental development. They love to talk of the great when they have not yet learned of the small. They like big talk. They discuss God and the infinite when they do not know nature and the finite. They are like the small boy who is Captain Kidd, in command of a great ship, when he should mind his mother and run along and hoe the potatoes. There is too much groping after the great and remote things by minds that have not grasped the simple nearby things. The more ignorant of facts a person is the more prone is he to turn his mind to the infinite and the supernatural; the more deeply one is learned in the natural sciences, the facts of the tangible things, the less time does he spend

in consideration of the infinite and unnatural. The scientific man is not in danger of taking up with these strange cults.

The ultimate appeal of the Christian scientist, like the patent-medicine man, is to results. We cure, they say. The wise man says, nature cures for you, and you take the money. They point to the good people who have embraced the faith. But it is well known that credulity is often associated with intellect. Persons of intellect are not altogether free from the danger of falling into the hands of the charlatan or taking up with strange cults. There are many good and intelligent people who believe that their future happiness depends upon their thinking that woman was made from the rib of a man, that a child was born of a virgin, that the sun once stood still in the heavens at the command of a man who desired to make the day longer in order to give him more time to kill his enemies, that five thousand hungry people were once fed to satiety on five loaves and two small fishes. These are not more strange or less unnatural than the beliefs of Christian science. There are spiritualists who are hard-headed business men. Let us not be asked to judge of things by the good people

who believe them. Let us go to nature and learn the truth at first hand.

We are interested in the Christian-science cult because it is new, not because it is unusual; because of its importance to those who are sick with fatal but curable maladies; and because of the light it throws upon the imperfections of the mind as a reasoning mechanism. There are few more interesting exhibits of the power of the human mind to becloud a subject with a jumble of unintelligible jargon than can be witnessed when one of these people is asked, How is the insane man, whose mind is defectively operative because of a tumor of the brain, to free himself from sickness, pain, and death? How is the new-born babe, which has neither thought nor language, to free itself from the effects of dirty milk? How are the lower animals to know that sickness, pain, and death do not exist? How is the poor benighted savage to know that he is not sick and dying when his heart is growing weaker and his eyes more dim, and the vital functions slowly ceasing? Is the absence of sickness, pain, and death a special benison for those who purchase the text-book of Christian science?

Christian science is one of those interesting

vagaries that have from time immemorial become fastened upon certain susceptible minds. They come and go. Its chief harm is that it discourages the appreciation of the value of knowledge, and denies the observations of the senses.

We are human creatures, not gods. Our senses are our best guides. It is through them that we know the outside world. If we deny them, we close out the light of day. And in our darkness it matters not whether we imagine the chambers of our abode filled with beauty and with light, it is still dark. The blind do not see. It is impossible for light to pass through an opaque lens.

Let us have charity and kindness for these people, and remember that most of mankind cherish delusions which are contrary to the experiences of the senses and to the understanding of the intellect. We have not yet reached that state of mental development when the unnatural can be cast out.

XXI

THE EMMANUEL MOVEMENT AND KINDRED PHENOMENA

THE fact that Christian science is reaching a large number of people with psychic ailments warrants the belief that there is a middle ground between the people who deny the materiality of things and those who believe only in material things and the natural forces which connect them. There are comparatively few people who have purged their minds of superstition, so that these movements have a wide application. Aside from their appeal to unnatural agencies, they have entered a field which is properly medical, but which medicine, busy with its old-fashioned therapy, has failed to develop; that is represented in psychology, the inculcation of hopefulness, the distracting of the mind from imaginary ills, and the great power of suggestion. But this is a medical province, and medicine is more capable of developing it than the clergy.

The clergymen who originated the Emmanuel movement went about it in a manner which has not invited criticism, and have striven to antagonize scientific medicine in no way. It is an evidence of how the modern dominant superstitions can be put in harness with a great psychic principle and made to do service for the mentally deranged.

This movement now has gotten entirely away from its originators and is fast becoming widespread. Its destiny is to add testimony to the value of psychic influence in the treatment of diseases. It does some good and much harm. People who have ills are prompted to appeal to agencies outside of nature, and they recover from their ills. Most would have recovered had they appealed to natural agencies, because most illnesses tend to recovery no matter what is done. But these people already provided with superstition, when they find that they have recovered, attribute the change to an extranatural power influencing natural phenomena; and the result is that they become more deeply steeped in superstition than before. They confuse *post hoc* with *propter hoc.* If there is any one thing that has kept humanity in ignorance and degradation it has been the superstitions,

not the least of which is that which conditions the existence of a great extranatural power which can be induced by certain means of solicitation and entreaty to change the natural course of events which, without such solicitation and entreaty, would not be changed. This is one of the most degrading of the superstitions fostered by some of the systems of religion. Science is making a successful contest against it, and the minds of the people are ridding themselves of this incubus and obstacle to moral and intellectual progress. These healing movements of a religious character cannot much interfere with the march of science; but they can strengthen the hold of superstition upon minds which might otherwise have shaken it off and become free to receive enlightening, natural truths. We should have little sympathy with doctrines that are recommended because they have the power to relieve an individual of certain ills, when in so doing they implant a falsehood in his mind, which sooner or later will cause him harm, and also make him the center from which radiates to others the pernicious influences of false testimony.

So far as the Emmanuel movement goes, it has spread widely over the country, but even

now it makes no pretense to keep within the bounds of discretion stipulated by the Emmanuel Church. It is doubtful if there is another church in America where it is confined within reasonable limits. An enormous brood of healing systems have been hatched out of it. The text now is, "Christ healed the sick, let us do the same."

These movements are being seized upon by the Church, in the superstitions of which the people in their enlightened progress are fast losing interest; and, as a practical and tangible means of attracting attention and rendering apparent help to the afflicted, they are destined to be widely exploited. That means the breaking loose from the plans laid down by the original church in Boston, and the ultimate "healing of the sick" as a priestly function without medical intervention. And it will succeed for the same reason that charlatanism, the patent-medicine business, and Christian science succeed. That reason is, because where ten people are sick nine will recover, irrespective of whether they are treated by the laying on of hands, by the taking of a bottle of colored water, or by appeals for intervention addressed to an extranatural power, or to a graven image. It

is a winning game. So long as more than fifty per cent recover it will succeed. If forty-nine say, it did me no good, and fifty-one say, it helped me, it gains two recruits; but when the figures become as ten to ninety simply by virtue of the tendencies of nature, we see the enormous advantage nature gives to any system of healing exploiting itself for public support. Regular medicine, happily, enjoys the same advantage.

The influence of the mind over the healthy body is very great, but the influence of the mind over diseases of the body is very slight. Morbid processes in the tissues of the body, commonly called diseases, are so distinctly the product of physical causes that taking thought of them has little effect one way or the other. This has been pretty thoroughly tried. The Indian medicine man, the voodoo doctor, Lourdes and the saints, have all testified that actual diseases are not much influenced by the mind. History shows that these methods have done more harm than good. A person with a tuberculous joint, who throws away his splint and declares that he is well, eventually pays dearly for his faith; but that is not all: what is still worse he prompts others to do the same. And since these places

do not keep statistics and follow up their work after the ordinary scientific methods, the deluded followers witness only the beginnings of the treatment but not the end. When the tuberculosis patient has worn his splint until the inflammation has subsided (and surgical advice is prone to be on the safe side and urge its use until after all possibility of disease has passed) and then visits a shrine of the saints, casts aside the splint, and proclaims that he is cured, he will find to his joy that he is cured. Such an one is doubly dangerous, because of the harm of his influence upon others.

On the other hand, the influence of the body upon the mind is very great; and the more medicine is learning of it the more its importance is being realized. Nervous diseases are now most successfully treated by the scientific method which seeks for the physical basis of the disease. The first requisite in the treatment of mental derangements is the hygiene of the body. The insane did poorly in former days when it was supposed that they were possessed of evil spirits and devils, and were confined in unwholesome cells. They are now recovering in our modern scientific institutions, where they are put at useful work in the open

air on the farms, given wholesome food, and made to keep their bodies clean and their hands occupied. The novelists and story writers pass along the traditions of the heart stopping, the hair suddenly turning gray, and birthmarks being produced by thought; but the authentication of these things is not to be had. Persons with the so-called imaginary diseases, for which no physical basis can be found, it is safe to assume have some slight physical derangement. Time, the great healer, may cure them; medicine, to numb the feeling of discomfort while recovery is taking place, will often be given the credit; infusing the mind with the opium of optimism and hope may be assumed to have the curative power; but in ninety-nine per cent of cases life in the fresh air, occupation, cleanliness, simple nourishing food, and hygienic regulation of the bodily functions will give quicker cures than medicines, hypnotism, or prayer.

The Emmanuel movement will give better results in the long run if it is turned into a fresh-air movement.

To sit down with an unhappy victim of perverted notions, or one whose mind has been confused by theories and introspection, or one who

has not a sufficient grasp of real facts, and talk common sense to him, is an admirable service. This is the duty of everyone, be he physician, clergyman, or neighbor. But let it not be supposed that this is what these "psychic movements" do. They have broken away from plain common sense and gone up into the air; and the few men who have tried to treat the matter in a scientific manner have been left forsaken and branded as unspiritual.

That these movements will foster a system of quackery there can be little doubt. A man who in the name of morality and religion can stand before people and declare for such things as in his heart he does not believe, and which in private conversation he will deny, I think would trade in the credulity of the superstitious; and after the laying on of hands or some other formality, if the patient recovered, as most likely would be the case, he would encourage the patient in the belief that through his agency an extranatural voluntary power had been induced to interfere with the disease and the patient had been made well. This movement cannot be kept in the hands of the discreet and honorable men with whom it originated; it is particularly adapted to the ecclesiastic

charlatan, and in his hands it is destined to become a refined system of quackery.

The people best qualified for the treatment of disease are those who are familiar with the anatomy, physiology, and pathology of the human organism. Let the cobbler stick to his last. When the clergyman, following the lead of the people, ceases from superstitions, before taking up the practice of medicine let him turn to the teaching of morality and ethics and lend a hand in the improvement of social conditions. These are the fields into which he is destined by evolution to be directed, and in which he can be of great service to humanity.

XXII

OSTEOPATHY

OSTEOPATHY is defined by the osteo- healing which treats diseases of the paths as "that science or system of human body by manual therapeutics for the stimulation of the remedial forces within the body itself, for the correction of misplaced tissue, and the removal of obstructions or interferences with the fluids of the body, all without the internal administration of drugs or medicines." This would be all right were it not for the fact that the osteopath treats all internal diseases and regards them all as being due to these peculiar causes which he enumerates. Here is the danger of a general system of treatment which fails to take cognizance of the anatomy of disease.

It should be well known that the administration of medicines is but a minor part of the science of medicine. Medicine is occupied with discovering the causes and the means of preven-

tion of diseases. Hygiene, sanitation, legal medicine, and public health are subjects of its study. It is the science which connects biology with the practical saving of life and the relief of physical suffering. It has made smallpox a rare disease; it has deprived diphtheria of its power to destroy; it has stopped the spread of contagions; it has reduced the mortality in more than half of the diseases of the human family; and it now points out to the state how typhoid fever may be eliminated. Legislation, admitting into the practice of medicine persons who lack medical training, lowers the standard of medical practice and recognizes and licenses to practice medicine persons who are not educated or professionally interested in these most important departments of medicine. Such legislation allows the so-called osteopath to diagnose, treat, and have under his consideration cases of contagious disease, when his art is, at the best, a system of massage. It allows him to diagnose, treat, and sign the death certificate in criminal cases of poisoning when he disclaims an interest in the physiology of drugs and other poisons.

The practices of value in "osteopathy" have long been known to medicine. It is one of many

measures used in the branch of medicine called therapeutics. Therapeutics includes massage, electricity, passive motions, dietetics, medication, hydrotherapy, rest, exercise, heat, cold, poultices, counter irritation, etc. These so-called "displacements of tissues" with which the osteopath concerns himself have little or no basis in the pathology of disease. Diseased tissues have been studied earnestly for many hundreds of years, but the peculiar conditions which the osteopath can feel through the skin have not been revealed by knife or microscope. There are certain slight dislocations of vertebræ which have their own peculiar symptoms. A knowledge of anatomy and physiology easily explains these symptoms. But the osteopath, without understanding bacteriology or the nature of infections, attributes infectious diseases to these displacements.

Osteopathy was "discovered" by a Dr. A. T. Still, a physician in Missouri, who, in his biography, reveals its origin. He says:

> Who discovered osteopathy? Twenty-four years ago, the 22d day of next June, at ten o'clock, I saw a small light on the horizon of truth. It was put in my hand, as I understood it, by the God of nature. That light bore on its face the inscription: This is my medical library, surgery and obstetrics. This is my book with all directions, instructions, doses, sizes, and quantities to

be used in all cases of sickness and birth, the beginning of man: in childhood, youth and declining days. I am something of what people call "inspired."

This piece of rhetoric lies at the foundation of osteopathy; and we have seen certain of our legislatures, delegated to safeguard our interests, our educational standards, and our health, declare for it and place it upon the catalogue of educational requirements.

Such systems as this come and go. History is full of them. And among their followers have always been those whose very standing have helped to give them impetus. This thing will shortly pass into history with the rest and be forgotten.

That many chronic cases of inflammations, pains, and neurasthenic illnesses have been relieved by massage is as true as that many serious and acute conditions have been aggravated by it. Any "system" will prosper if it does not do too much harm, for the natural tendency of diseases is to recover. Therapeutics is but one of the departments of medicine, and to exalt one of the many therapeutic measures to the position of the whole science and art of medicine can be designated only as unwise.

XXIII

FACTS AND THEORIES

BEWARE of theories. My professor of chemistry and physics had a theory that the cost of producing illumination by electricity would make it utterly impracticable for general use; and, moreover, no electric light would be big enough to read by, anyway. He used to show an electric light to the class to prove it. If his experience with electricity had been well founded, it would have prompted him to say, even before the electric light was spoken of: "Some day this force can be used for purposes of illumination remote from the seat of power." I trust that this excellent man may read these lines by the electric light in his library; and I hope also that he may recall with happiness the theories which he has fostered and which have survived the wearing tests of time and experience.

Beware of theories. When the steam engine was invented, an Englishman wrote a book in

which he set forth his theory that it would be impossible to propel a vessel across the ocean by steam power. The writing was lucid, the reasoning was correct, but the premises were wrong; and the first volume of this excellent work that came to America was brought over in a steamboat, thereby demonstrating that one fact may carry away a volume of theories.

"Experience teaches," it is said; but it teaches two things: it teaches that which is right and it teaches that which is wrong. If the experience is based upon correct principles, it will elevate and help; but if it is based on error, and erroneously interpreted, it only serves to drag down. Suppose that a man practices upon a theory to which he is committed dogmatically—he has made up his mind that it is right—if his assumption is an error, his experience may do him more harm than good, for he twists phenomena to fit his preconceived ideas.

The man who learns, who is capable of learning, holds his theory-engendering and theory-harboring faculty always in abeyance: he keeps it in a state of relaxation and openness. He permits the ever-flowing stream of facts to percolate through it and wash out any theory that

cannot withstand the current. Upon the ability to do this hangs the proposition that experience teaches and helps. Pity the man who does not allow experience to change his mind.

Happy is he whose theories are well founded on demonstrated facts and so well tried that he is inspired by the truth of his convictions. The hopeful persistence of Harvey and Semmelweis in establishing truths in the face of obstacles is an inspiration to every man who believes that he possesses the right idea.

"The earth shall yet surrender to him and the fates shall do his will, who marches on, though the promised land prove to be but a mirage, and the day of deliverance be canceled. The gods shall yet anoint him and the morning stars shall sing."

XXIV

THE FAMILY HAZARD

GIVEN a good doctor and a sick man—just those two alone—and the latter is to be felicitated upon the situation. When there is introduced the complication of the anxious wife, the solicitous family, and the critical neighbor, Heaven help both doctor and patient, and all of us! Many an important life has been sacrificed upon the altar of extramedical solicitude, when with the same disease a poor devil without friends would recover. To harrow up the doctor's soul with the anxieties over his responsibility warps judgment, saps vitality, and introduces an extraneous element with which the doctor has no business to deal. His duty to every patient is the same; it is to give his best talent and skill. When the life of the Empress was in danger, Napoleon saw that the physician was embarrassed by his great responsibility. With his extraordinary knowledge of men and his faith in the conscien-

tious skill of his physician, he said: "She is but a woman; forget that she is the Empress, and treat her as you would the wife of a citizen of the Rue St. Denis." The physician simply did as he thought was best for his patient in peace of mind and confidence, and the Empress recovered.

The best results to both doctor and patient accrue if the former can concentrate his attention upon one thing—the proper treatment of the case before him. When he has to practice feints, and exercise his ingenuity to make his conduct and practice conform to the whims of bystanders; when the demand for concealments from some and collusions with others are thrust upon him; and when his nervous system is assaulted by alarms and solicitations, the interests of his patient are jeopardized and his own days shortened.

The wise physician does the best he can for all. The wise friends of patients spare him as much annoyance as possible, and aim to help rather than to hinder him in the work of his lofty calling and in the exercise of his best skill and judgment.

XXV

EATING AND TALKING

WE are becoming convinced that thorough mastication is highly desirable. Confirmed dyspeptics are curing themselves of their ailments by giving more attention to the chewing of their food. In fact, of late, this particular physiological function has received much serious attention, to the great advantage of all—to say nothing of the dentists. But as we contemplate this new masticatory era, we hark back and encounter the long-accepted and time-honored dictum, which has never been disputed, that good company and conversation aid digestion. It seems that this ancient decision, born of the round table, the alehouse, and the "merrie companie," must be reversed in the court of the new gastronomy. When one is engaged with a mouthful of food, he should be unmolested until it is resolved into solution.

Mastication, as a physiological function, has

been too much disturbed by the ancient dictum above referred to. Here is the eater conveying a loaded fork of nourishment to his mouth; at the same moment his table companion propounds a question or utters a statement which demands a response. Witness the gulping down and the responsive sputterings. This is no unusual scene. Of course there is no objection to talking in the intervals of mastication, but this is practically impossible in the atmosphere of so-called table good-fellowship. It is hardly to be expected that your company shall time the working of his mind and conversation to the working, so to speak, of your jaw. That is an utopian dream. It would be straining antiphonal possibilities. The invitation, "Let's go to the Waldorf and hear the newly rich eat!" bears witness to these contentions. Talking and eating mean often munching and gulping, but not mastication.

The company of those who understand us, the company of healthy children, and the company of those who do not demand entertainment from us, are surely not undesirable at mealtime; but society which is pestiferous and which demands talk is subversive to the best interests of the table. The old dining-hall

legend, that conversation aids digestion, is presumably false. The notion that a lull at the table means that the dinner is not a success at that moment, will not bear the scrutiny of modern physiology any more than it will when two or more, gathered together, are engaged in any other physiological function. The most important thing should have precedence. An ideal conversation at the table would be simple voluntary contributions of pleasant thought which excite no immediate reply from anyone engaged in eating. To ask a chewing guest a question is as rude as to jostle his elbow. An appropriate and modern dining-room motto would be, "Let the full mouth be undisturbed."

"It is not well for man to eat alone" is true only provided his society is agreeable, intelligent, and familiar with the physiological proprieties. Otherwise he will do better to conduct himself like the lion, and, while he gnaws his bone, devote himself to that function exclusively. When we eat, let us eat as simple men that are nourished by their food.

PART II

MEDICAL SCIENCE AND MEDICAL ART

I

THE EVOLUTION OF SCIENTIFIC KNOWLEDGE

SOME years ago, at the Marine Biological Laboratory at Woods Hole, a certain biologist was laughed at by the undiscerning because he spent the summer at the apparently unpractical work of studying the biology of the parasites of fishes' fins. This scientific man devoted himself to the proposition that all information is practical; and to this thesis I dedicate these observations upon the evolution of scientific knowledge.

The true scientist is searching for knowledge. Whatever it is or wherever it is, he knows that it is one of the links in the chain of the great universal truth; and eventually, sooner or later, it will be of practical service to mankind.

There are two classes of investigators: those who are studying for ends of immediate utility and practical application, and those who are at work in the neglected and apparently unpractical fields of research. The first have re-

ward and the *éclat* of applause for their results; the second hand down to posterity some new facts which in their day have found no great utility, while they have enjoyed the approval and appreciation only of the select few who have known of their work. All honor to those whose deeds remain unsung, who have labored in the cause of science without hope of applause.

While we acknowledge the debt we owe to Finlay, who suggested that the mosquito is the infecting agent in yellow fever; while we erect a monument to Reed, and lay a wreath upon the grave of Lazear, who gave us the proof; let us not forget the pioneer biologists who studied the morphology and physiology of the mosquito, and who were called unpractical. They worked, little thinking of the importance of this insect to human life, but they formulated and made accessible their knowledge, sitting out the hours in the laboratory beside the faithful microscope, and dying, never to hear the word "benefactor." Until the bubonic plague was understood, the flea was an unimportant insect. But science now takes down the book in which is written the biology of this little animal, and recognizes as human benefactors the

men who studied it and who are now gone, unthanked for their service.

Between these two classes of earnest men is still another: those who belong to the first class but have failed. Suppose that courageous little woman upon whom McDowell operated in the cabin in the backwoods of Kentucky had died —such a result has occurred in less serious cases in the hands of men of even greater skill than he—and the waiting mob had destroyed the surgeon, the name of McDowell would be practically unknown to us; and yet the merit of the man should have been as great. Suppose that O'Dwyer, after the years of labor to perfect his intubation tubes, had found that they failed; he would have been the same meritorious O'Dwyer, he would have labored just as earnestly for mankind, he would have sacrificed as much for them—yes, more—but there would have been no reward, for the goal would not have been attained. If he had lived to this day, he would see the usefulness of his labors almost made null by the invention of antitoxin; yet the work of O'Dwyer and the motives that inspired him would have been the same. Suppose that Koch's tuberculin had done what he had hoped it would, he would have been acclaimed the

greatest benefactor of his time, and honors would have fallen thick and fast upon him. His hopes were not realized, but shall he not have honor for standing upon the threshold where he could not enter in? The work he did and the hopes he cherished should merit it.

Pasteur, who stands preëminent and alone—his genius so far transcends all others—is the greatest and most beneficent scientist that continental Europe has produced. (He may be spoken of in the present tense, because if ever there was an immortal man it is Louis Pasteur; he lives in every laboratory in the world to-day where original biological work is carried on.) His early work was devoted to studying the structure of crystals, and the business mind, which demands immediate results, declared him an "impractical scientist." But the study of the crystals of tartaric acid in wine lead him to the discovery of the cause of fermentation, and thence to the effects of microörganisms upon living things, and thence to bacteria as the causes of diseases, and thence to the nature and prevention of infections and the principles of antitoxins and immunity—the most important discoveries into the nature of disease which it has ever been given to any man to make. Had

his researches halted with crystallization, the world would not have acclaimed him with the glorious title of benefactor; but undoubtedly from his beginnings some others ultimately would have carried on the train of thought and investigation as far as he, and his work among the crystals would have counted for just as much. It matters not to humanity, save for pointing an example, whether its great work is done by one man or by ten. Nothing is lost. Who adds a grain of knowledge to human wisdom is a benefactor. Had Pasteur never reached the goal of glory, still he should have been crowned with wreaths of victory, for he gave his life to the task of wresting Nature's secrets from her.

All honor to those who seek for knowledge; honor to those who enter into the dark and unexplored realms of Nature; honor to those who win from her the means of succor for the dying and relief for the suffering; and honor still to those who strive and strive again and fail!

The development of our science and art has been an evolutionary process. There have been no great discoveries *de novo,* but each has been the culmination of a series of efforts mingled with failures and successes. Many predeces-

sors carried the torch before it was handed to him who bore it to the goal and reaped the reward of immortality. All honor to him who thought and toiled—say not in vain—and died before the crowning of the end. He might have passed on this message from Strode: "I may never take you farther than I have been myself, but you may press on when I tell you of the vision I beheld. You may never fashion from the thing I wrought, but you may take your reckoning from the rare design where my clumsy hands fell short."

II

BACTERIOLOGY AND BOTANY

THE universality of medicine is displayed in the development of bacteriology. Here is a department of human knowledge which belongs to botany; but who would think of turning to the botanist for information about the bacteria, the youngest of the known flora? It was a chemist, Pasteur, who founded the science of bacteriology; and straightway from his hands it passed to the pathological anatomists of the science of medicine. Medicine has developed this wonderful field of knowledge, which ramifies into nearly all of the other physical sciences. The best methods of studying the bacteria, their life history, their classification, the means of cultivating them artificially, of staining and differentiating them, of discovering their relations to animals in health and disease, have all been worked out in the medical laboratories; and, finally, to medicine belongs the credit of study-

ing and discovering their biology, the character of their excretions, and the measures for their destruction. Medicine developed the science of bacteriology, and out of it evolved most important knowledge for the saving of lives—the knowledge of antitoxins and immunizing substances.

Bacteriology has placed upon a scientific basis all that the old-fashioned common sense called cleanliness. It has explained the mysteries of polluted water. It has defined the dangers of dirt. It has elucidated the etiology of most of the human diseases. It has even disposed of the superstition of the "bleeding wafer." It has taken man one long step toward the solution of the problems of his life.

Medicine has not only enjoyed the education of having brought this science to its perfection, but it has had the satisfaction of seeing it taken up by the chemist and the agriculturist, and turned to practical ends in their work. But we should never forget that the bacteriologists, the men who elaborated this subject into a science, have always been of the department of pathology of the science of medicine. Bacteriology grew up in the laboratories of the schools of medicine.

Botany lost a great opportunity. When it was revealed that the bacteria belonged to plant life along with the fungi, botany failed to step in and claim its own. If this ancient science had been as industrious in studying the biology of plants as it has been in cataloguing them, it might have advanced in importance to a point equal to that of zoölogy. The botanist has failed to interest himself sufficiently in the fundamentals of his science. He has been a catalogist; he has sacrificed the microscope for the herbarium; he has not been so much interested in the life of plants, in the origin and fate of plants, as in their family trees. The botanist has been too much of a genealogist and too little of a biologist. He has interested himself too much in the names of things, and too little in the things themselves.

In times long past the doctor of medicine, in the interest of his peculiar therapeutics, was a botanist. Little did botany dream when she let him in at the back door to dabble in her classified herbs and witnessed his interest grow less and less that after a few centuries, when apparently he had become most neglectful, he should boldly open the front door of her ancient castle and walk away with her fairest

flower, which now for a score of years has adorned the gardens of the sons of Sol.

Bacteriology in twenty-five years has had given to it much patient research, claiming the sole attention of more devoted men than have worked at botany in a hundred years. Most of these men are unknown to the world, but several hundred of them have contributed equally to the development of this science. Botany had her great lights, some of the greatest men that any science has known. They have been but few, but they were all great men—Aristotle, Pliny, John Ray, Linnæus, and Asa Gray.

It is interesting to observe that three of these five botanists were physicians, and two of these physicians were the greatest scientists of their respective centuries. But the greatness of these men was not manifested alone in botany, they were naturalists and pioneers in the field of zoölogy as well. Had they been living at the time of the birth of bacteriology, it is doubtful if it ever would have departed from botany.

But the parting came. Bacteriology has grown toward humanity, and has become of infinite, practical, everyday usefulness to mankind. Botany is still the aloof, genteel, æsthetic science. For the bacteriologist the suffering

and dying beckon on. For the botanist the flowers in the meadows nod their heads, the pine trees sing softly their lullabies, and the breezes of summer bear upon their wings the odors of the wayside vines.

III

SPONTANEOUS GENERATION

"Things happening to-day are merely the copy and reflex of things that happened in former times."

NOW and then some one goes into print with the statement that biology and modern medicine are founded on the thesis that life does not originate spontaneously. It is interesting to encounter the dogmatic statement that modern medicine is founded upon this assumption, and that "not only does no living thing originate except from preceding life, but no portion of any living thing comes into being, except from a living particle of the organism of which it is to form a part."

If there is any one thing upon which modern biology is agreed, it is that there was a time when there was no life upon the earth, and that life sprang up as the result of the fortuitous conjunction of carbon, hydrogen, oxygen, nitrogen, sulphur, and phosphorus, together with moisture and heat. Biologists believe that the same natural laws which originally combined

these elements into protoplasm, now exist and continue to operate. While no one has succeeded in making protoplasm synthetically, we do know that it was once made in the great laboratory of Nature, which is still in operation with its constant and immutable laws. No biologist contends that new bacteria or nucleated cells come into existence spontaneously, but, contrary to the dogmatic assertion above referred to, many do agree that living matter, similar to that from which the bacteria are descended through the microphyta and microzoa, originates spontaneously and, indeed, is originating spontaneously all the time. The cell which Virchow dealt with is a complex, highly organized form of life compared with the monera of Haeckel or the protoplasmic slime out of which they spring.

It is not medicine, but rather theology, that is founded upon the proposition of an early and never-repeated creation. Because plasmogeny is not susceptible of laboratory demonstration, there are still those who, according to F. A. Lange, "love to shelter themselves in those dark corners which science has not yet illumined with its rays, and there to hang up their cobwebs to catch sound reason in."

The monera of Haeckel and the protoplasmic slime found in the sea, which biologists are more and more agreed represent the simplest known forms of living matter, have never been discovered in process of production, because their generation took place or takes place under conditions with which we are not familiar; but this does not necessarily hold good for all time. Geologists have never discovered the diamond in process of formation in nature. Artificial chemistry has produced organic compounds which had previously been found only as a part of living organisms—urea, alcohol, grape sugar, butyric acid, acetic acid, lactic acid, fat, amyloids, and alkaloids. Chemistry is steadily approaching the production of protoplasm, although it will be most difficult to produce artificially the albuminous molecule, which is large and extremely complex in structure, its atoms being held in very unstable combination.

When we speak of spontaneous generation the modern interpretation does not call for complex organisms, but the most primitive plasmogenesis. Other interpretations have long since passed away. Christendom once believed that elephants and all other things

were results of a single creative act; Harvey thought mice were generated spontaneously; Pasteur's "infinitely small" were the yeast organisms; Virchow's ultimate organism was the cell; Haeckel has carried us to the monera; and a host of modern observers are at work in the border land between living matter and the inorganic world, discovering in crystallization and among the inorganic molecules activities closely akin to those of so-called organized material. But the fact that the chemist has not yet succeeded in creating protoplasm or because the biologist has not yet identified it in process of creation, is no ground to assert that spontaneous generation is impossible and that the laws of nature, which once produced living material, are no longer operative in that direction.

The plants are demonstrating the truth of archegony. The chlorophyll cell possesses the synthetic power of plasmodomism or carbon assimilation; it builds up protoplasm out of inorganic materials—water, carbon dioxide, nitric acid, and ammonia. Thus in the laboratory of the plant we behold the construction of the protoplasm, which botanists are agreed is purely by virtue of a chemical process. The plant is

formed of inorganic matter and can be resolved back into inorganic matter.

Max Kassowitz, in his "Biologie," calls attention to the necessity for conceiving of the development of organic from inorganic material as requiring an incalculably long period, and not as a sudden chemical process. But that archegony, or spontaneous plasmogeny, does occur is pointed to by nature and believed by a large number of biologists.

If in speaking of spontaneous generation one could be so loose in the use of language as to refer to cellular organisms alone, such as bacteria, then we must say that most agree that bacteria spring from bacteria; but no one familiar with the great principles of evolution would dispute that new and ever-changing varieties of bacteria are developing even now as a result of natural selection and the laws which lie beneath the mutations of species.

IV

THE BEGINNINGS AND PROGRESS OF THERAPEUTICS

WHETHER we think of man as the low-browed primate, as the warrior clothed in the skins of animals, or as the exalted ruler of creation, he has always sought for remedies to assuage his pains and the ills of his flesh. This has continued to be the main function of the individual practitioners of medicine, notwithstanding that the philosophers of all times have insisted that the highest object to which medicine can attain is the prevention of disease and the prolonging of life.

The treatment of diseases began long before man knew the nature of disease. Then came the study of anatomy and physiology and pathology, and the development of the science of medicine; but therapeutics, the oldest of all the branches of medicine, has always attempted to progress faster than its sister branches and keep in a degree independent from them, thus

showing its primitive origin. There always has existed a disposition to try remedies for diseases before the nature of the disease had been studied, or, indeed, before the nature of the remedy was known. This constitutes the empiricism which lies at the base of therapeutics. And somehow or other there crept into the mind of man the unfounded notion that somewhere in the world there was a remedy for every symptom of his ailments. To this add the superstitions, begotten of religion and credulity, and we have the picture of the humble origin of our materia medica. The employment of drugs and chemicals in the treatment of disease began too early; it would have been better had it followed rather than preceded pathology. It commenced wrong. It began at the target, and not at the bow; it began at the top, and not at the bottom, as all well-founded knowledge should.

Our modern materia medica is a continuation of fetichism, down through alchemy and empiricism. Its brother is the amulet. It is but a few steps in human progress from the rust of the sword that killed an unbeliever to Blaud's pills; from the powdered tails of scorpions to the tincture of capsicum; from the decoction of

the shells of the eggs of a dove gathered from the cloister wall to the liquor calcis of the drug store. Drugs with little or no effect gradually gave way to those which had a demonstrable action; and we have our materia medica. This development has been through empiricism.

After the Middle Ages the science of medicine developed with extraordinary rapidity. Much information was accumulated; new truths were discovered; but the practical application of these truths to therapeutics was unconscionably slow. Yet much of the best knowledge that we have at the present time for the prevention and treatment of diseases was then in the possession of man.

The science of medicine is of value to the people only as it is brought in a practical way to their daily needs, and this administration has rested largely in the hands of its practitioners. Have they applied most wisely and practically the knowledge of human disease which has come down to them as the heritage of time and which the patient labors of thousands of earnest men have won? Were it possible for us to project our vision backward into the past for so short a period as a hundred years we should witness in the medical administrations of that

day such therapeutics as would convince us that the fetichism of drugs survived still in the very presence of scientific medical knowledge. And what of to-day? Have we any compunctions as to what the historian shall see when he projects his vision backward, a hundred years from now, upon us? I fear we have. What is the present status of our medical therapeutics?

The young man who graduated during the past century, or I may say during the present, was sent out into the world to practice medicine with the impression that drugs are the main reliance of therapeutics. His professor of therapeutics was also professor of materia medica; and his mind was trained so that when the treatment of disease was mentioned he at once thought of the particular drugs that were indicated. Text-books upon therapeutics exhibit two different arrangements: one gives the description of the drugs, and then follows this with the diseases in which they are indicated; the other gives diseases or symptom groups, and follows this with the drugs to be used. The combination of drugs with therapy is so close that the student cannot escape it. And yet, beyond and outside of all of this, lies the great field of therapeutics only just beginning to re-

ceive the scientific attention to which its importance entitles it.

The chair of materia medica and therapeutics should be divided. Materia medica should take its place where it belongs in the department of chemistry. The science of the treatment of diseases should be put along with the teaching of the pathology and symptomatology, or else made a separate branch of the teaching of the practice of medicine. The teacher of medical, or nonsurgical, therapeutics should become one of the most important adjuncts to the faculty of medicine. He should have to do with the rational treatment of diseases. He should not teach "sectarian medicine," the treatment by drugs alone. He should roam all the fields of every art and science, and take the best they have to offer. His therapeutics should be founded on physiology and pathology, not on chemistry and botany. He should teach the student how to treat a sick person, not what drugs to give in certain diseases.

The man who knows the history of his race knows that homeopathy, osteopathy, Christian science, and the kindred delusions, would not have secured the following they have unless they had something to offer. If this is anything

that can be employed in the treatment of diseases, it is the business of the scientific therapeutist to find it out and let us have it. We have had to learn for ourselves that homeopathy taught the healing power of nature; our professor of therapeutics did not tell us. The old-time doctor saw patients recover under the administrations of the homeopath without their taking any appreciable medication. There was not much difference between the mortality in his practice and that of his homeopathic neighbor. It was a valuable knowledge to acquire, that a sick man might get along pretty well without any drugs; and we have to thank the homeopathic delusion for teaching it. Unfortunately, or fortunately, as the case may be, apostasy has overtaken the disciples of this particular cult, and they have become addicted to the administration of drugs to such a degree that we are quite deprived of further opportunities of observing in their practice the phenomena of the *vis medicatrix naturæ*.

Christian science, founded upon unreason, teaches us the value of the influence of mind over certain mental illnesses. It has demonstrated this in a practical manner; and the therapeutist who ignores it is not wise. Chris-

tian science is a demonstration of the power of optimism. It also teaches that the natural tendency of most diseases is toward recovery. Because the good in it is wrapped in the warp and woof of ignorance and superstition does not make it any the less good or available, any more than morphine or iodine should not be prized because they are found in nature associated with noxious and inert materials. Osteopathy, a combination of massage, ignorance, and charlatanism, is adding further proofs of the healing power of nature and of the value of massage and passive motion in certain chronic diseases. Whether these therapeutic fads, which proceed to treatment without knowledge of the pathologic anatomy of diseases, do more harm than good, I shall not now attempt to discuss; but that they do teach valuable lessons to medicine cannot be gainsaid.

If the therapeutist wished evidences of the natural tendency of diseases to heal themselves, he need not go to these pseudo-sciences and to quackery for proofs. He may find them in the legitimate practice of medicine. He may see the apparent success enjoyed by many a legalized practitioner whose knowledge of medicine can scarcely come under the head of knowledge.

We have arrived at the threshold of the institution of rational therapeutics. We were not taught it in our student days, but now we are learning that drugs, excepting the antitoxins and a score of products of the laboratory, have a very subordinate place in the treatment of the diseases in which the mortality is being lowered. In a recent paper, W. M. Barton (*Jour. Am. Med. Assoc.*, vol. lii, No. 20) cites the following instances of pharmacologic fetishism: olive-oil and gall-stones, valerian and hysteria, tannic acid and internal hemorrhage, alcohol and ether injected in shock, colchicum and gout, potassium iodid and sclerosis, chlorate of potassium and stomatitis, the hypophosphites and neurasthenia, lithium and uric acid diathesis, and calcium salts and internal hemorrhage.

With our professor of materia medica drugs were the first consideration in the intestinal diseases of infancy, in phthisis, typhoid fever, the exanthemata, appendicitis, erysipelas, and pneumonia; and now how small a figure they play in the treatment of these conditions; because rational therapeutics has developed out of the study of their pathology.

V

THE RATIONALIZATION OF THERAPEUTICS

OUTSIDE of the drug store are many valuable remedies. More important than drugs in the treatment of diseases are fresh air, sunshine, cleanliness, proper clothing, proper eating, proper breathing, good morals, temperance, equanimity, kindness, self-reliance, exercise, rest, occupation, the care of the mind, the training of the child, high ideals, knowledge of hygiene, optimism, and cheerfulness. It is the *absence* of these that has *caused* most ills, and they, instead of drugs, should have the first consideration in the treatment. How little really well-formulated knowledge we have of these vital things compared with our well-formulated knowledge of the uses of drugs. The charlatan often steps in and masters one of these subjects, and scores a triumph over the doctor of medicine.

I have seen a man dying with pneumonia in a room so close that the nurse had a perpetual

headache, but the poor man was taking oxygen from the drug store. Why? Because the use of oxygen from the drug store was taught by the professor of materia medica and therapeutics, but not the use of the oxygen of the free and open air which can be secured without the mystic scroll which means *recipe*.

The teaching of the patient about his disease so that he may coöperate with the doctor is often necessary for successful treatment. The doctor's life in the future is going to present even more responsibilities than it ever has. The time is approaching when he must give more of his personal attention to the sick. He shall not escape his duty by dashing off a prescription, and leaving the rest to nature and the druggist. He is becoming too useful and too learned a man for such shirking of responsibility. In this work the trained nurse and the assistant to the doctor are destined to play an important rôle. There are directions to be carried out and instructions to be given, and an in-touchness with the patient to be maintained, which can best be done through the agency of such assistance.

The foundation of therapeutics is in pathology, etiology, and diagnosis. The physician must get at the root and the cause of the mal-

ady before he can treat it intelligently. Next, he must eliminate the cause; and when he has done this he has progressed so far in the treatment that the cure is usually in sight. There is many a doctor who stands well in his profession, whose waiting room is crowded, and who gives only sufficient attention to each case to ask a few hasty questions, write a prescription, and say, "Take this, and let me see you again one week from to-day." The chances are that the patient will be better, but the wise man knows that this physician has not stood in the proper position in the tableau of doctor and patient. Already the doctor's duty to the man with consumption is no longer ended with a prescription for cod-liver oil and creosote. This evolution we have witnessed in the last few years.

The new therapeutics demands of the physician that when a patient comes complaining of a headache she shall not be dismissed with a prescription for a drug, but that the cause of the complaint shall be determined and the stuffy bedroom in which she sleeps shall be flooded with fresh air day and night. When a patient seeks help for his loss of appetite he shall not be cast aside with a prescription for a bottle

of nux and gentian, but the cause shall be discovered, and he shall have prescribed for him a walk to his office instead of a ride, instructions in deep breathing, and an omission of the preprandial cocktail. When the doctor is consulted for the pain in the leg of a child, he shall not have fulfilled his duty by sending the parent to the drug store for salicylic acid, but he shall learn the cause of the pain, and upon determining that it is coxitis, apply the rational treatment. Therapeutics is becoming something more than a few encouraging words and a bottle of medicine.

The old therapeutics kept the children with tuberculosis of bones and joints in the hospital ward where they might not be cold, and depended upon treating them with hypophosphites and cod-liver oil, while abscess after abscess was evacuated. The drugs are now omitted, and the children are put out in the fresh air and sun, anywhere—on the roof, in the garden, on the balcony—and there are fewer abscesses to open.

Most diseases are preventable, and most diseases will subside when the cause is removed. Consumption is a product of a combination of the violations of the laws of natural living

which we boastfully designate by the name of civilization. The only treatment that is successful is no treatment at all, for it simply consists in taking the patient out of the pernicious and unnatural environment in which he contracted the disease and compelling him to live naturally; that is, in the open air, and on simple and nourishing food. Had he lived this way before, he would not have had consumption. In all the practice of medicine there is no more pitiful sight than that of a doctor who should know better dealing out pills to a patient who needs to be told how to live; and in all the practice of medicine there is no more glorious sight than that of a doctor, who knows how, preventing the developing of a disease or discovering and removing the cause.

One of the greatest needs of medicine to-day is a scientific formulation of the old knowledge. Let us formulate and put upon a scientific working basis the important things which involve the everyday life.

Some children sleep with their windows open summer and winter, or sleep out of doors, and are the ideals of health. Others sleep with their windows closed, and look sickly and often are sick. Which is better? Are these observations

only exceptions which have some other explanation, or are they worthy to be studied and formulated; and should we not be as well agreed upon this subject as we are upon the action and uses of strychnine?

Treves has emphasized the beneficence of diseases, and he has gone so far as to allege that we should all have been dead long ago had it not been for diseases. This is not offered in a spirit of waggery, implying that we live by diseases; for in this flippant sense it would always have to be left to some one else to do the suffering. That is the idea promulgated by the humorist who said that the best place to have a carbuncle is on the back of the neck of somebody else. What Treves refers to is that the *symptoms* of disease—the pathologic changes of disease—are but a manifestation of an effort on the part of the body to rid itself of some offending and harmful foreign substance. Whether it is bacteria, ptomaines, or cucumbers that are causing the trouble, the symptoms are but an evidence of a salutary effort of the organism to rid itself of the noxious invader. Peritonitus has saved more lives than "all the drowsy sirups of the East"; but we should not lose sight of the fact that the drowsy sirups

of the East may sometimes be used to supplement the salutary action of peritonitis and help save life.

The effects of drugs fall into the same category, along with the ptomaines and cucumbers. The so-called physiological actions of drugs are the symptoms of an effort of the system to throw off an offending foreign substance, or they are an evidence of the system being overcome by this same substance. They represent reaction to foreign material. Fortunately, many of the drugs can be made to supplement disease in stimulating the activities of the natural forces of the body, and thus have a salutary action in hastening the elimination of the disease. Undigested and irritating material in the intestine is productive of increased peristalsis and a flow of serum into the bowel. Castor oil produces similar results, and therefore is useful in aiding Nature in her effort to eliminate the cause of the disease. The antitoxins are employed as synergists to the natural healing powers of the body, and accordingly are of much value. The objectionable drugs are the inert drugs, those which do actual harm, and those which detract attention from more important things.

The medical profession has fostered it, and upon the medical profession devolves the duty of curing the public of its drug addiction. The physician least learned in the nature of diseases is the one most given to the employment of drugs. They are the lazy man's expedient. The educated physician gives drugs often to relieve immediate conditions or to induce comfort while he corrects the cause, and patiently waits for nature to cure the disease. But when he gives medicine as a placebo he is placing his stamp of approval upon a practice which he knows is wrong. The American public takes $75,000,000 worth of patent medicines yearly. Who taught them that the remedy for illnesses is drugs? And who but the medical profession indorsed the use of drugs as the sovereign remedy for disease? But now as rational therapeutics advances, and we are placing less dependence on drugs, the charlatan keeps up with the procession. The medicine quack is being succeeded by the "food expert," the "physical-health instructor," the "breathing expert," and others, all who claim that they, too, have advanced beyond therapy by drugs.

A journal devoted to the interests of osteopathy has recently gone through Osler's works

and culled out the instances in which, in speaking of treatment, he has not advised the employment of drugs or has said that there is no known internal remedy that is of service in influencing the course of the disease. The list of diseases is a rather large one; and the inference is that because Osler does not advise any particular drugs in their treatment, they are without the pale of medicine. The rational view should be that if honest investigation shows that drugs do not influence these diseases so much the worse for the drugs and so much glory for the investigator. Medicine does not live by drugs alone.

The very name of our profession is an unfortunate one. It is outgrowing medicine and is taking its place as the science of sanitation, of hygiene, of health. Medicine began by efforts to make the sick well: to that it has added its efforts to preserve the well in health. Sanitary science is what modern medicine means, and sanitary science is what it should be called.

It has been ruled by courts in several instances that the practice of medicine consists in administering drugs, and that if no medicine is given it is not the practice of medicine. A

broader interpretation has been placed upon this subject by the courts in some States. The law in many States, however, allows an irregular practitioner to see a case of typhoid fever through his disease, and calls him blessed, provided he does not give any medicine; and yet, cases of typhoid fever are recovering every day in our hospitals without having received a drop of medicine.

If we could imagine that for fifty years the manufacture and internal medical use of ninety per cent of the drugs now employed were discontinued, it is conceivable that therapeutics would advance to a position which it now will take more than a century to attain. Therapeutic measures and hygiene, now neglected, would be seized upon, and when fifty years had rolled round we should be surprised to find how poorly we prized our old friends of the apothecary shop, and how well the practice of medicine had prospered without them. If there were no quinine or arsenic for malaria we should exert our energies in a campaign of extermination against the mosquito. While the drugless treatment of consumption has accomplished splendid results in reducing the mortality from that disease, still, its greatest value has been in teach-

ing people how to live. Its best value is to the nonconsumptive. However, I do not suggest the discontinuance of the use of potent and valuable remedies; I make these statements to call attention to the other and more important side of therapeutics.

I would not be understood to advocate drug nihility, for the plants and the minerals and the laboratory furnish invaluable therapeutic aids; but I do insist that rational therapeutics begins with pathology and prophylaxis and the restoration of physiological conditions, and that medicine has too slowly grasped the simple and natural principles of therapeutics.

The therapeutic aids of the greatest value are the simplest and cheapest and most accessible. Most of the illnesses against which treatment is aimed are due to violations of right living. To restore the patient to normal living is treatment of double scientific value: it offers cure for the present and prevention for the future. Let us felicitate ourselves that in our day we have witnessed the dawn of the new therapeutics and the decadence of the fetichism of drugs.

VI

THE FATE OF MEDICINE

THE medical profession is engaged in carrying on a propaganda of destruction of the necessity for its own existence. It lives by the presence of the diseases which it is striving to make extinct. As a business it puts aside business principles; as a profession it is the most beneficent force at work at the present time for the improving of the condition of human life. If it were a business, it could properly say: "We will make ourselves as competent as possible to heal your diseases if physical misfortune overtakes you or if you are so foolish as to make yourself sick." That would certainly be a laudable enterprise, and the physician would thrive beyond the thrift of the butcher or baker or banker.

If medicine were a business and the medical profession were a trust, the plague and smallpox and cholera and diphtheria would be rife and feeding fat the doctor's wallet. But one

by one medical men have learned the causes of the diseases and applied the means of prevention. Much thankless toil and labor this has cost. The medical profession has not only discovered the life-saving, preventive measures, but it has begged and pleaded with the people to accept them. It has humiliated itself before legislatures, it has appealed to governmental authorities, it has spent its substance in the education of the people, it has labored with the individual for the sake of his own health, it has taught the mother how to save her babies from sickness—and all the while taking the bread from the mouths of its own children.

Now, more than at any time in history, medicine is laboring so successfully in the interest of the prevention of diseases, and the great value of this work is becoming so well appreciated, that we are confronted with new conditions and possibilities of metamorphosis of medical activity. We are at the beginning of the time when preventive medicine shall be something more than an exceptional benison; we have arrived at the time when the actual practice of preventive medicine will be pursued with all the activity which the ancient physi-

cians applied to the so-called healing of diseases.

We may properly ask the question, To what is this leading? What is to be the fate of the medical profession? And the answer is plain to one who has read clearly the history of his race, and who has faith and hope in the destiny of man. *The tendency of the medical profession is toward its own obliteration.* Let us be thankful that this is true, for this is the spark that vivifies it and makes us know that it is a living thing. All that is in process of evolution upward must lose itself and disappear. All that truly lives must die into something else. The dead rock endures unchanged for ages, but man dissolves himself into mankind and dies.

When I speak of the obliteration of the medical profession I do not speak with the tongue of the prophet, who sees unto the very end, but rather with the insight which discovers the steady workings of that great evolutionary force which day by day, *"Ohne Hast, ohne Rast,"* sees the diminishing necessity for the doctor. This is the reason why he is entitled to the designation Doctor. The true mission of the teacher is to lead his pupil to the goal where he can be independent of him. Emerson has

said that the state exists for the purpose of making men wise, and when all men have become wise the state, or government, will have no excuse for existence and will cease.

Medicine is a noble profession because her sons are entitled to this title of Doctor. We should guard it jealously. Doctor means teacher. It is one of the two great titles. The other is Mother. The Teacher and the Mother have a similar mission. It is to make those who look to them for succor independent of them. Each is working toward the weaning of its charge. The mother duty is to nourish and train and guide the child toward the day when it may be independent, and thrive as well without her. If she fail in this she fails in her highest duty. The function of the teacher is the same. The goal toward which he leads his pupil is to make the pupil possessed of *his* knowledge and the benefits of *his* talents. The true teacher withholds no secret of his profession. He gives all. He strives to make his pupil perfect, even as himself. He makes the pen with which the pupil writes his emancipation. If he fail in this he has not taught well.

As the mother is to the child so is the medical profession to all mankind. It is slowly but

inevitably, with beneficent purpose and with lofty aim, abdicating the necessity for its own existence. Whether the complete abdication will ever be attained, no man can say; the important fact is the goal toward which we aim.

VII

THE FUTURE FIELDS OF MEDICAL ACTIVITY

DURING the evolutionary progress of medicine there will always be an important mission for the doctor. He will have less and less to do with the care of the sick and more and more with the prevention of sickness. When the relative proportion of doctors becomes less, the importance of the individual doctor should become greater. One physician as sanitary commissioner at the head of a community can prevent an epidemic of typhoid fever which would demand the activities of a thousand physicians once it is started. The physician, exercising the preventive function, is to be the important man, not only as the community adviser, but as the family and individual adviser as well. Common sense and the present tendency of scientific work declare that it is better to exercise endeavors to prevent disease than to cure it. It is cheaper to keep one man constantly on guard to prevent the

spark from striking the tinder, than to summon a thousand in the hour of distress to save the burning citadel.

The fields of activity of the medical profession are destined to be, in national and state councils and executive offices, safeguarding the health of the people; in the more intimate relations with the public in county and municipal health offices; and in the personal relations of teacher, family physician, consultant and specialist.

And some day the wise man will attach the physician to his family, not to cure diseases but to prevent them. As a business matter it will be more economic. One of our greatest social absurdities is permitting people to become sick and then employing a doctor to get them well. It is the largest of all of the preventable wastes. We are prodigal of nothing to so great a degree as we are of our health. That is our greatest national extravagance. In that we find the chief waste of natural resources.

Health is too important a thing to be made subject to the rules of trade and commerce. When the average man is taken sick he then employs a doctor to help him recover. The doctor is placed in the unfortunate position of

depending upon the morbidity of others for his livelihood, and the patient is placed in the unfortunate position of having his misfortune become the doctor's advantage. This system works hardship to both parties. A better state of civilization will demand that the physician be regarded as a public necessity, and that each community shall have competent medical men, with assured incomes, the same as health officers, paid by the public. The better the state of health the physicians can maintain in their districts, the greater should be their emolument —not the less, as it now is. Every person should have easy access to skillful and scientific medical services, not as a matter of charity, but as a matter of right. The charlatan would not thrive under such conditions. A policeman is now assigned to a certain district to prevent and correct violations of the law. Health should receive the same consideration as property does.

That the people of this great country are to have a national department of health, there is no doubt. Such a branch of the Government, with the support of Congress and the coöperation of State boards of health, would have in its power to wipe out typhoid fever, yellow fever, and malaria, and reduce enormously the mor-

tality from tuberculosis. It should have, aside from the intrinsic merits of the case, representation upon the Cabinet of the President. The counsel of a wise sanitarian would be of value to every department of the Government.

In the several States the fields of usefulness open to the departments of health are large. Gradually they are growing up to their opportunities. As they demonstrate what can be done, the people give them more money and a larger scope. Some States have efficient and growing boards of health and accomplish much. Those States which have not yet awakened to the value of such work suffer for their negligence.

The municipal and county departments of health are the most appreciated. That is because they are nearest to the people. All municipalities are constantly increasing their efficiency and the field of their work. The city of New York has added to the work of its health department the function of having inspectors at the farms where the city's milk supply is produced. This is a natural outcome of the work of inspecting milk as it comes into the city. Inasmuch as this milk comes from six different States, which supply several hundred other mu-

nicipalities, if each sent inspectors to the sources of supply there would be an overlapping of inspectors, which can only be corrected by Federal supervision. The work of these municipal health departments is undergoing a steady evolution. They conduct bureaus of vital statistics; inspect buildings, factories, schools, etc.; supervise case of contagious diseases; conduct hospitals and clinical laboratories for diagnosis; manufacture antitoxins for the poor; give courses of instruction on health and hygiene; send nurses to care for and instruct the sick; provide food for consumptives; furnish medical advice and proper food for infants in summer; and in a thousand other ways contribute to the health and comfort of the people. While the functions of the other governmental departments in our cities remain about fixed, the power and scope of the activities of the department of health in every well-governed and thoughtful community is being augmented.

One of the needs in our system of medical education is to train men to meet these new conditions. No college in our country has a course in hygiene and sanitation worthy of the name. Doctors are to be trained to fill the important positions, arising on every hand, in sanitation

—municipal, State and national. Preventive medicine is the thing. The need of specially equipped men is becoming urgent. The first school in this country to train men as sanitarians will mark an epoch.[1]

These signs of an advancing civilization are cited to show the fields of activity and usefulness which are inevitably developing for the medical man. He is destined to be more and more of a voice and a hand in the multifarious functions of government.

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[1] One year after this was written and nine months after it was first published, Columbia University announced that it had twelve experts in hygiene and sanitary science at work on a plan for the establishment of a school of preventive medicine. It is proposed to train men for the positions of health officers and sanitary inspectors, so that even small towns may be properly safeguarded against conditions that foster and breed disease. The proposed school will seek to prevent tuberculosis, blindness, and alcoholism. A study of foodstuffs and the milk supply will be features of the course. This is the most important announcement that has ever been made by any medical school in this country.

VIII

MEDICAL SCIENCE AND HUMAN PROGRESS

AS the official and public duties of the physician increase and diseases become less, there will continue to be a demand for men who are learned in human biology—perhaps as great as at this present time when we hear so much of the crowded profession. Certainly there will be less need of the therapeutist, for if there is any one thing that should be regarded as the sign of advancing civilization it is the recession of morbidity. There will be, besides the general practitioners and the specialists, members of the medical profession occupied in the various public medical activities. The field of the sanitary engineer is beginning to be developed. Medical men will be required as educators. All great undertakings, involving human lives, will be advanced under medical supervision. The blessing and approval of the priest gives way to the blessing and approval of the doctor. We have witnessed the transformation. The policy as exemplified

by the armies of the crusaders must give place to the policy as exemplified by the army of Japan which multiplied threefold the number of its medical men and tenfold their authority and took a stand away in the van of human progress. The sanitarian is to take the place of the bearer of the sacred icon. The value of medical supervision is demonstrated at Panama, where two continents are being cut in twain; and where men are learning that the operation to be well done, or, indeed, to be done at all, must be performed with the aid of the physician.

The most fertile lands on the green earth have not yet been made the abode of man. He has tended to grow away from them and into the cold and uninviting north, because he could eke out a living where bacteria could not; and where bacteria were everywhere, he perished. But medical science is destined to banish the infective diseases from the tropics, and open up for human habitation rich lands where the date and banian now grow unseen by human eyes. It is destined to give to mankind a new world, equal in size to that which he now inhabits, and many times more fertile, where grain will wave and roses bloom the whole year through, and

children wax healthy and merry in lands now pregnant with disease.

It is in making life more livable, in shielding man from the unseen enemies which prey upon his body, in preserving his family, and in completing his mastery over the malignant powers of nature, that the field of medicine lies. The scientific study of diseases has already lent its aid, with importance equal to that of astronomy, geology, or biology, in purging the mind of man of superstitions which since the beginning of history have hampered his moral development. The current saying that every doctor is an atheist only means that the mind of the doctor is more free from superstition than is the mind of the average man. The ranks of spiritualists and religious fanatics are not recruited from physicians. The doctor has learned to believe in the eternal materiality of things and in the constancy of the forces which connect them; and even though causes may be hidden from his eyes he believes that they exist and he has faith that they can be found. Pasteur in discovering the relation to disease of the "infinitely small" things did as much as Galileo in the overthrowing of superstitions and the belief in miracles.

We see how far-reaching are the influences of our science and art, and how important a rôle they play as human aids. They touch the bodily and spiritual welfare of the individual, of the state and of mankind. Hand in hand with the progress of civilization go the advancements of medicine. Medical progress has ever been an index to human advancement.

IX

PREVENTIVE MEDICINE

THE highest form of service which the medical profession can perform for mankind is in the prevention of diseases. This is a field which is entirely its own. In the other departments of medicine we come within the realm of the other sciences, such as biology, chemistry, and botany, but prophylaxis is distinctly the function of medicine. Medicine can never hope to be of as much value in the treatment of diseases as it can in their prevention. Cholera, smallpox, puerperal septicæmia, yellow fever—it is here that humanity owes its greatest debt to medicine. But curiously, treatment must precede prophylaxis; for it is in the long and futile period of treatment that an intimacy and a familiarity with the disease is bred, out of which grows the knowledge of the disease which makes possible successful prophylactic measures.

It is in the study of the prevention of dis-

ease that medicine has no rivals, and is the least apt to be misunderstood. This realm is not invaded by the charlatan or the pseudo-scientific sect. The "schools" of medicine have not to do with prophylaxis. They are not interested here. Homeopathy, osteopathy, Christian science, the Emmanuel movement, vitopathy, and the patent medicine movement, all are zealous in the treatment of disease; but the science of medicine differentiates itself from them in that, while they are concerned for the sick, scientific medicine is searching out the causes of disease and applying preventive measures. Medicine, as an organized profession, is the only great movement having as an aim the reduction of morbidity by preventing the well from becoming sick.

Intelligent and scientific effort in the prevention of disease is tangible and can be measured, and is freer from confusion than is treatment. In the treatment of diseases the forces of nature are just as kind to the mercenary quack, with his "incomparable elixir," as they are to the conscientious and skilled physician, who hopes only for the health of his patient. The patients of both will recover; and so, too, will the patient who is given some noxious drug.

The first two will be done no damage; the last may be either harmed or helped; but misunderstanding and credit misplaced have been always the accompaniments of the art of treatment. Therapy is the inexact part of medicine.

What has been done toward the prevention of cholera can be done with typhoid fever. The fifteen thousand persons who died of this latter disease in the United States during the past year are a needless sacrifice, for medicine has developed the knowledge which, if applied, would make typhoid fever an obsolete disease. Politics alone stands in the way. If the medical profession were given *carte blanche* power to eliminate typhoid, it would be done. Medicine has perfected the knowledge of this disease and the means for its prevention, and the people want the disease stopped, but the representatives of the people are busy with mergers and tariffs and appropriations and jobs, while the pale faces of those fifteen thousand, dying of a preventable disease, are seen only by the profession of medicine. When some community is awakened by an awful epidemic, it arouses itself, and some petty local measures are applied, always successfully, to prevent the disease; but what is done for a village should be done for

the State, for the country and ultimately for the world—and the disease would end.

This will be done—it should be done now—and then typhoid will pass into history, a conquered disease. In the meantime, your son, on the threshold of life's work; and your daughter, with the roses of health in her cheeks; and your wife, the mother of the laughing babe; and you, who are now reading these words, may return in the autumn, and lie down on your bed and die; for the mergers must be put through, and the tariff must have attention, and the appropriations must be passed round, and the jobs are meat and drink.

X

THE DIFFUSION OF MEDICAL KNOWLEDGE

WERE we to ask ourselves the question, How can the public appreciation of the art and science of medicine be improved? the answer would be, education—education of the doctor and of the public—and the means to this end are steadily at work. The past generation has seen the quality of the doctor much improved, and none of the other branches of learning has surpassed medicine in the march of progress. The young men now entering practice represent a degree of culture which gives to our profession the flower of manhood; and the preparation necessary in most of our institutions, and the legal requirements imposed in most States for a license to practice, are all contributing to place the medical profession of the future upon a higher plane than ever before.

A unified profession is of the next importance. That means laboring together in har-

mony; each giving freely to the others whatever of advantage he may have to contribute; vying with one another to see who can give the most. Every community should have its medical society for the interchange of ideas and the reporting of experiences. The presence in a community of a medical library is also of much value. It is surprising how one or two high-class men in a locality doing advanced work, act as an inspiration to the rest of the profession, and improve the habits and practices of their colleagues. We find this everywhere. Around every strong man there develops a school. In many small cities and towns are groups of men doing admirable work, sending abroad their influence, and giving a higher tone to their local profession.

General and special societies help toward the perfection of medical organization. A great national society, such as we have in the American Medical Association, can do much for the advancement of medicine. Aside from its functions as a society, with meetings and discussions, it can encourage the scientific spirit by furthering pure science and offering encouragement and rewards for scientific work and discoveries. Properly, this is the function of

the state, but the state is not yet ready to do this, and only in a few rare instances has it shown recognition to medical discoveries. Our national organization is steadily increasing in influence and usefulness. It has done much in the exposure of frauds in proprietary medicines. It stands for high ideals. It has advanced the cause of medicine by endeavoring to secure a national department of health; and it is conducting a scientific propaganda against sexual vice and other products of public ignorance. It behooves the profession to take pride in this great association, and make it as perfect as possible and a fitting representative of its most noble ideals and traditions. Such an organization can be made to serve the best ends of the profession; it can cultivate professional uniformity and unity, bringing the remote and humble doctor into closer touch with his most advanced and successful colleague. But, above all, the most important work within the reach of such a great association is that which is directly in line with the essential aims of our art—the advancement of medical knowledge.

In the relation of the medical profession to the people, a needful step is the education of

the public. By that, I mean, awakening in the public mind an appreciation of the function, the aims and the possibilities of medicine. There is an ancient and still prevalent notion that it is unethical to communicate these things to the public, and a certain medical aloofness exists which has left the field largely to that class of pseudo-scientific persons who take upon themselves to misinform the public. A barrier of secrecy has been encouraged by the doctors of former days; and relics of the superstitions of medicine linger even yet. Happily, the work of breaking down these obstacles to the advancement of medicine is well under way. The publications and circulars issued by state and municipal departments of health are of much value. Popular magazine articles and many books give the public further enlightenment. But still good would accrue if medical men would contribute more upon medical subjects for popular reading. Certain laymen have rendered good service in this direction. The physician need not feel that in communicating medical knowledge to the public he is laying himself open to the charge of self-exploitation or of invading the field of the charlatan. It is the charlatan who is ever invading his field. The

campaign for the health of the people is a campaign of education. If health departments are to have their work go smoothly, the people must understand it and be in sympathy with it. No laws for improving public health will be satisfactory if the people are ignorant of their meaning.

The need in our general system of public education to-day is the compulsory study and teaching of biology, human physiology, and hygiene. The most important thing for the student to know about is himself, and this study should supersede all others. It has taken two thousand years to recover from the pernicious teaching that one should give no thought of what he should eat, or of what he should drink, or where he should lay his head, or where withal he should be clothed, or even of the morrow; but now that enlightened people have rejected this doctrine, it may be hoped that the race will return to the joy and interest in its own animal health, and in the perfection of its offspring once displayed by those sturdy Greeks before they were subjugated by the hosts of asceticism which deprecated the joys of this world. The first essential in the building of character and morality is good health. The

morality that is whining and sickly and prays to be "set free" has done the world irretrievable harm. The joy in life and the joy in the great gifts of nature are for the healthy. The world needs the physically fit.

The engineer is most competent to keep his engine in a state of efficiency who best knows its construction, its workings, the dangers that threaten it, and how to overcome them. The most important thing that concerns the student is his own body, and the most important thing that concerns the race is its offspring. It is not the part of wisdom to study the things all about us without knowing about the very body for whose benefit we presume to study these things. A student may be able to read in Greek of the prowess of Alexander, but it boots him little if he is nearsighted and unable to ride a horse. The overtrained college athlete has studied to poor advantage when his heart gives out before he is fifty. A man may know the history of all the tribes of Israel, but his life contains a sad failure if he is destined to spend it with a sickly wife, the relic of a healthy sweetheart, whose invalidism and sterility are of his own making because of his ignorance.

Go into any of the two million homes in this

land now harboring an invalid, and in most of them you can trace without difficulty the disease back to ignorance. Most of these sick are suffering with preventable diseases. In some, the culpability lies with the invalid; in some, with the state; but in all, the prophylaxis lay in education. Knowledge and more knowledge of ourselves is the need.

Not infrequently we hear expressed the notion that it is best that laymen should not know about their bodies. People are going to have some sort of idea about these things, and it is better that they should know what is true than believe what is false. In a community steeped in misinformation the truth can do no harm. If they are not taught the truth the newspapers and the charlatans will see to it that they get some sort of information. A layman who thinks that a pain in the back and a sediment in the urine are signs of kidney disease is not an educated man. Enlighten the public, and we shall have enlightened patients. We need not fear to teach the public the principles of therapeutics. Nearly every layman has some favorite remedy for something. Let some one be taken sick away from a doctor, and witness the therapeutic suggestions pour in.

There are certain fundamental and simple facts in animal pathology which are of more importance for the individual to know than that he should know of the pathology of nations, the decay of dynasties, or the moral pathology of the French or English court. Yet our children are taught the latter of these in their schools—indeed, it is compulsory—but of the former, they know little.

If the citizen is taught to take pride in the military conquests of his country he should also be taught to take pride in her conquests of disease. Let those be honored who have saved as well as those who have destroyed. There is no war which we should know of, or be taught with greater zeal, than the conquest of smallpox. The battle to save our mothers from puerperal sepsis, waged by Semmelweis, is of more moment to humankind than is any of the bloody fields of carnage Creasy wrote about. The conquest of pain by anesthesia; the victory of asepsis; the routing of the bacillus of diphtheria by antitoxin; and the victory over the alimentary infections of infancy, really all concern us more deeply than the history of wars. History should be something more than a narrative of bloodshed and commercial conquests. There

have been soldiers whose mission has been to win victory good for all time, victories, the products of which can never be wrenched from us; and the story of these victories should be known to all.

This teaching should be accomplished by school text-books, by formal history, and by current literature. Medical associations could do the progress of medicine an additional service by supporting committees on publicity or general enlightenment, whose function it should be to advance the public knowledge and appreciation of the medical sciences.

Some day a Gibbon or a Lecky or a Buckle shall be raised up to write an history in which the discoveries of medicine and the accomplishments of sanitation shall be set down in their real relation to the progress and well-being of nations. The latter historian has come very near doing it for England. Until that day it remains for us to make the best material for the historian of the future that lies in our power. Let us make the records clear; and the historian shall find inspiration and joy in recording the services of medicine to humanity.

XI

COLLEGE PREPARATION FOR THE STUDY OF MEDICINE

THERE is much discussion concerning the education that best fits a man to enter upon the study and practice of medicine. There is not only much discussion of this subject but much confusion as well. To say that a man should have a collegiate education before entering upon medical study is confusing. It would be better and more simple to say that he should have an adequate education. Education is a glorious institution; it is the next grade in human advancement below culture. It should not be confused with learning, as it often is; nor should it be spoken of as synonymous with a prescribed period of time spent amid certain academic surroundings. These are all different things. The education which every man should have, or at least should strive for, is that which is best calculated to conduce to two things: his usefulness and his happiness. I am much in sympathy with that

man who said he could not afford to take the time to go to college because he was too busy getting an education, even though this observation unfortunately does imply something of lack of respect for that excellent organized educational institution, the college, which, on the whole, has more to commend it than the haphazard facilities of the extra-collegiate world.

To demand that matriculates in medicine shall have had a college training, if not unwise, is at least unfair, for the reason that the college training, with all its preliminary requirements, involves an amount of time which postpones too late in life the completion of the medical study necessary for the practice of medicine. To shorten the college course by allowing the last year or two to be applied to the course in medicine, is an admirable step, but it compels the student to study medicine in the same institution, unless reciprocity arrangements are made between the colleges. Otherwise such a course is not possible with the college that has no medical department.

When the college gives a training that is more practical and helpful and less devoted to the things of minor importance, when it has

freed itself of the ancient traditions of culture, then men may be required to have enjoyed its benefits before being allowed to take up medicine. The medical school that requires the bachelor's degree for admission excludes many of the positively objectionable men, but it also shuts out the one man, who occasionally comes along, who would rise above all the rest, and who could be of the greatest service to medicine and to humanity.

Without entering into a discussion of the weaknesses of the educational system to which our American colleges are committed, it may wisely be assumed that the medical student should have some sort of a systematic preliminary education, and the nearest approach to what that should be is found in the college. The defect which could be remedied most easily is the defect of attempting too much. The college cannot hope to put the student in possession of all human knowledge. It should help him with that which is most useful, train his mind in habits of observation, logical thinking, memory and industry, and show him the index catalogue of the good things that life has to offer.

So far as academic study and information go,

the student gets the most important of these before he enters college; they constitute the entrance requirements. The principles of mathematics and the rudiments of the languages and sciences are the things of importance to the medical student, not higher mathematics and the intricacies of tongues which he expects soon to forget. Unfortunately under this prevalent system the very important things, the principles, he studies in the preparatory school, not with an appreciation of their meaning and value, but as a grind, having for its end the unconditioned admission to his favorite college. He has skimmed through the best of his subjects, and they dwell in the past as a vague dream. The best results will be secured when the student has more rudimentary teaching in college. Let the requirements for admission be less rigid, so that a man may enter at fifteen and devote the first years of his college life thoughtfully and deliberately to those important things which the preparatory school now attempts to teach him, but which the college, beckoning him on, compels him to touch but superficially.

Our one mistake is to combine the college and university. These two should be separate. The

boy at college gives much attention to athletics, the fraternity and his chums. This is well and good; but this so-called college life cannot be advantageously combined with the work of the student who is really a university man and engaged in the scientific study of subjects for his life work. It is also true that the boy's college studies are not made sufficiently vital to him, as something to help him in life. They do these things better in Germany. There the university is a university *de facto,* where the student studies his special subject, and may follow it to the full extent of human knowledge. The gymnasium prepares him for the university; but the gymnasium is also an institution of learning, and has not for its aim and end the quiz compend function of the American preparatory school. We have a few preparatory schools which are worthy of a better name, and they might wisely be remodeled, slightly amplified, and send their graduates directly to their special university studies. Our so-called colleges and universities are something less than universities and more than colleges. They are becoming unwieldy and complex. In the department of arts the contact of pupil with teacher, so valuable in the old-time college, has

disappeared. The best thing they have to offer is the contact of student with student under certain regulations and in an atmosphere of culture. Aside from this the student may profit by his opportunities little or much as he pleases, just as he might if he were in any other position in life.

I cannot conclude without offering the suggestion that the college will attain to its greatest usefulness only when it becomes a less peculiar institution. By that I mean, it should approach more closely the conditions of the life for which it is preparing its students. The monastic life, as an educational scheme, is a failure. The period of a man's usefulness is short, and life is too precious for one to step aside from the path of usefulness and isolate himself, professedly for self-improvement, for a period of years, and then hope to come back and immediately take up work as a useful member of the community. The best way to prepare for the life that one aims to lead is to live it. The best schooling for usefulness is to be useful. When our college system is perfected the student will spend a certain part of each day in some useful occupation—some occupation which in the terms of the world has a com-

mercial value. The best way to learn chemistry is to teach it at the same time; and so the enlightened student will teach those who are less enlightened than he. When a student begins to have a grasp of a subject then he should face about and take some part in teaching those who are less proficient. Upper class men should be instructors of lower class men. Then there should be practical work with the hands. Hoeing potatoes is just as good exercise as golf, and sawing wood is a splendid preparation for the oarsman, if one does these things in the right spirit. The negroes at Tuskegee have discovered this. Harvard must learn it.

In medical schools the monastic policy has recently been disposed of. The medical student no longer gains his knowledge by sitting at the feet of the grave and learned teachers, drinking in their words of wisdom and deluding himself that he is securing a medical education. No; he walks the wards, he examines cases, he prescribes, he puts on dressings, he takes histories, he makes analyses. In fine, he prepares for practicing medicine by practicing it and seeing it practiced; and this has been found to be the key to medical teaching. If he has good teach-

ers he observes that they, too, are students. The boy is father to the man. He recognizes no line of demarcation; and, if he has been well taught, a student he remains always.

XII

THE HOSPITAL INTERNESHIP

SOME day no student will be graduated in medicine and licensed to practice unless he has had hospital experience. The hospital will supplant, to a large degree, the lecture hall. Students will be taught more at the bedside. Some day the hospital and the patients will appreciate the advantage of having students in the wards. But that day is not yet. At present a minority of graduates in medicine have hospital experience. This is secured by taking the competitive examination for positions on the resident or interne staff of the hospitals.

The student about to graduate in medicine, casts his covetous eye about for the hospital whose congenial walls shall receive him and harbor him for some two years, while he pursues the work which he hopes will culminate in the making of a doctor. He is fortunate, indeed, if he rids himself of the idea that he is

after a hospital; he is wise if he is imbued with the thought that he is seeking knowledge and experience. There will be classmates of his who, without becoming internes, will excel him in both of these. The interneship is but an opportunity; there are many others. The earnestness and the fidelity and the thoroughness that he puts in his study tell the story. He can get out of his cases only the knowledge that he works out of them. There is no easy-chair method. Scientific knowledge must be worked for; it is never a gratuity. So let the student try for his interneship; he is fortunate if he gets it—fortunate for the opportunities which it affords. Happy is he if his college has taught him enough of a subject to whet his appetite for more.

Let us understand that we are brothers, and always students, in a great confraternity. It is for none to arrogate to himself the title of master. The interne of yesterday is the attending of to-day; and the knowledge of each is incomplete. Happy the two if they work together as fellow-students in mutual helpfulness and sympathy. That hospital is a blessing in which the attending has a personal delight in the faithfulness of the house surgeon and the thorough-

ness and perspicuity of the historian, and in which the internes observe with pride the diagnostic acumen and therapeutic skill of the attending, which he has developed out of the same opportunities which now are theirs.

I have heard a house physician boast that he had had entire charge of the service ever since he came on duty. He might have had that anywhere in the great outside world of private practice. Here is a house surgeon who tells that he did six abdominal sections in a week, but the chances are that the attending surgeon was either lazy with satiety or indifferent with overwork.

The hospital interne is better off in the hospital where he is associated with thorough, painstaking, and conscientious attendings, who treat him as a fellow-student, working together with them to learn and to improve themselves in their branch of medical knowledge, than he is in an institution where he is given responsibilities, and goes it alone without the coöperation of those of greater experience, knowledge, and skill. All his life must be one of personal responsibility; in the hospital he should bend his energies to learning from others and with others.

And here I come to the question of learning. Learning is of value as it has trained the mind and the hand, and as it is available when needed. I once saw a case of trichinosis slip through the diagnostic fingers of three men, and be caught by the fourth who had never before seen a case; and the first three could have passed a better examination in trichinosis than the man who caught the pig. The first three had been hospital internes, the last had not. Number four had no more knowledge of the subject than the others, but he had his knowledge formulated and available. He had it in prospective relation to a case of trichinosis; the others had theirs wrapped up and pigeonholed as independent abstract material. It is the business of the student to run a wire to his knowledge, and keep the line in order.

Finally, it is not the college, it is not the hospital, it is the animus within the man that shall make him superior. If he has the thirst for knowledge, he shall have it; if he has the longing to perfect himself, he shall excel. We have pretty much what we desire; provided always that we are worthy and capable. There is many a country practitioner—who once had the advantages of the help and sympathy of a good

preceptor, but never the advantages of a hospital interneship—who carefully studies his cases, thinks about them, reads about them, compares them with previous cases, who is above ready-made diagnoses and ready-made prescriptions—who is in his art and science a peer, and in his community the well-beloved physician and the noblest type of a well-rounded man.

XIII

STATE AND COLLEGE MEDICAL EXAMINATIONS

THE large amount of discussion and the diversity of opinions prevalent upon the subject of medical education and medical examinations show a restlessness and a certain degree of dissatisfaction which are salutary. An association of American Medical Colleges has been organized, and its work has resulted in an elevation in the standards of requirements for the doctor's degree. While the teaching of medicine has made advances along practical lines, the examination of the student, to test the learning that he has derived from his teaching, has not progressed so far. The old methods of oral and written examinations, chiefly the latter, are still the main reliance of the examiner. We know how imperfectly these examinations test the merits of the student, and we know how important a part is played by the cramming process and the expedients which constitute short cuts to success in examinations.

The function of the doctor is a complex one. He has many things to do, all of a practical nature, and he must know many things. A doctor must have knowledge which cannot be condensed in a compend or even in a more pretentious volume, and which the answering of questions does not test. A student may be able to answer as well as his professor the question, What are the symptoms of scarlatina? but, does he know scarlatina when he sees it?—that is the question. How would you treat a fracture of the lower end of the radius? may be glibly and correctly answered by one who is not able to treat correctly a fracture of the lower end of the radius. A practical examination is needed. In many of our medical schools such an examination is conducted in part: the students are marked in their practical and clinical work, and these marks figure in the ultimate result. Many hospital examinations for internes combine the practical and theoretical. These examinations often demonstrate that a man who passes an acceptable written examination is not qualified for the honorable title of doctor. If the state recognizes him as such, his title should be *Doctus sed non Doctor*. The state examinations are written and not practical, still, it would not be

difficult to make them practical. If the hospitals can do it the state can do it. It is successfully done in Germany, where the candidate is not granted a license to practice until he has shown actually that he has practical qualifications. He must display his ability to diagnose diseases, to make examinations, and to conduct treatment.

The horrible imputation used to be made that in certain states a man without medical training, with a good memory and a quiz compend, could pass the state's examination; and if he had the quiz compend in his pocket he need not even have a good memory. We should doubt the correctness of these assertions; but the mere fact that such statements have been made reflects upon the practical character of the examinations.

One of the blighting influences upon the study and teaching of medicine is the examination system. Its pernicious effects may be seen from the beginning to the end of the modern medical curriculum. Unfortunately, the examination fetich is gaining a stronger hold upon medical education instead of declining. Its influence is detrimental to our true aims. The present methods of conducting examinations

have a demoralizing effect upon both the student and teacher. According to Matthew Arnold, the true aim of education is "to develop the power of our minds and to give us access to vital knowledge." If the modern examination system does discover the powers of mind or the possession of vital knowledge, then it is good. But does it? Is it possible for an examiner who has never seen the candidate before, by asking a few questions, to discover "the powers of his mind," and determine whether he is educated or no? By this "external examination," the powers of the mind can be tested only to a very limited degree. One power of the mind is tested, and that is the power of passing examinations—the power of quickly recalling things recently learned. Lauriston E. Shaw says that it is just as illogical continually to worry a man, who is trying to develop the higher faculties of his mind, with investigations as to his memory, as it would be periodically to test the lifting power of a man who is learning to play the fiddle. The student is studying medicine to perfect himself in the observation and treatment of disease, not to cultivate his memory and his self-confidence.

"We tell whether a man has been well edu-

cated not by what he knows but by what he can understand." It is not the answer to questions that examiners should want, but rather knowledge of the fitness of the candidate to practice medicine.

XIV

THE STATE LICENSE TO PRACTICE MEDICINE

THE present medical laws in most of the States are the best that could be secured at the time of their enactment. They have served an excellent purpose in protecting the people from the worst types of incompetence. Their value has been appreciated; and many have been in operation long enough for their weaknesses to have been made manifest. A weakness in some is that they keep alive the so-called "schools of medicine," which are not entitled to be regarded as separate schools and which in reality do not exist. Homeopathic and eclectic medicine have practically disappeared; still, the laws of some states keep alive the delusion that they do exist.

There is decided harm in laws which create two or three separate examining boards. Other "schools" of peculiar therapeutics are demanding the same special privileges which already have been accorded to the two "schools"

now recognized. The same laws, it is insisted, which apply to homeopathy, should apply to osteopathy, provided each complies with the same requirements; and legislators cannot much longer be made to see it in any other light. When the state recognized one peculiar sect it opened the way to recognize all.

Before this absurdity has gone any further it should be stopped. There should be a single examining board in each State, whose business it should be to examine into the qualifications of candidates applying for a license to practice the healing art. Some States have adopted this system. This board should determine particularly the candidate's knowledge of the human body and its diseases, their causes, their effects upon the body, their prevention and their treatment. Of treatment, the most that we can demand is that it shall be either reasonable or authoritatively sanctioned; and advances of medical science will constantly make this a variable subject. What was authoritatively sanctioned treatment twenty years ago would not satisfy the demands of a present-day examining board; and we may draw the same odious comparison between some of our modern therapeutics and that of twenty years hence.

This board should determine that a candidate has complied with certain educational requirements, at least as high as are now insisted upon; and, having a satisfactory knowledge of the science of medicine, he should be licensed and allowed much latitude in his choice of treatment. A doctor whom the state recognizes should be simply a doctor. The state should know no homeopaths, eclectics, osteopaths, or hydropaths. Therapeutics is but a small part of the science of medicine. It should be the privilege of the licensed doctor to use small doses or large doses, massage or hydrotherapy, or whatever he please, provided he be well grounded in the fundamentals of medical science.

While the United States generally have supported high educational standards in the interest of the health of the people, it should not be lost sight of that there have been continuous assaults aimed against these high standards. The enactment and maintenance of salutary medical laws have not been altogether without opposition.

To the medical profession belongs the credit of having created these standards. It has been the medical profession that has served the high-

est interests of the people by imposing higher and more difficult requirements upon itself. Behind every act of legislation which has raised the standard of requirements for the practice of medicine has stood the great body of its medical men. They have supported every act of legislation which has aimed to preserve the health of the people, to improve sanitary conditions and to minimize sickness.

XV

THE PRACTICE OF MEDICINE LEGALLY DEFINED

AN adequate definition of what constitutes the practice of medicine has long been a desideratum whereby to determine compliance with the medical practice law or violation of the same. The Appellate Division of the Supreme Court of New York State rendered a decision in 1907 which supplies this want. The judgment of the Appellate Court is, that, to confine the definition of the words "practice of medicine" to the mere administration of drugs or the use of surgical instruments would be to eliminate the very cornerstone of successful medical practice—namely, diagnosis. The court holds that such an interpretation would rule out of the profession the eminent men whose work is confined to consultation and diagnosis. Diagnosis is an integral part of both the study and the practice of medicine. The court, citing the instance of consumption, which may, if discovered in time, be ar-

rested and eradicated by simple hygienic treatment, and that in the treatment of this disease drugs have been practically given up, propounded the question, "Would the physician, in such a case, who by his skill discovered the incipient disease, advised the open-air treatment and refrained from administering drugs, not be practicing medicine?" The court referred to the statement of another court in a similar case to the effect that, "the day has passed when it was thought that a physician's advice was of no use unless he ordered a dose of medicine."

It is held that the purpose of the medical law is to protect the people against charlatanism, ignorance, and quackery, and that it is not the legislative intent to restrict the examination of those desiring to practice medicine solely to that class of the profession who may prescribe drugs. This decision was arrived at after a study of the authorities throughout the country, and from examination into the history and growth of our own public health laws.

XVI

THE MEDICAL EXPERT WITNESS

THE medical expert witness often is spoken of in derision. Unfortunately the derisive comments are not confined to the lay press, but the medical press also has not hesitated to cast its calumny upon him. Is this opprobrium justified by the facts?

Medical men are subject to the same defects of judgment and limitations of insight as belong to other men. They are not peculiar in freedom from human weaknesses. Medical men can be differentiated from other men in two respects: they represent as a whole as high moral qualities as any class, and they possess the greatest knowledge of the human body and its diseases. These two assertions are easy to defend.

If expert medical testimony is required, the best man from whom to get it is a doctor of medicine. Occasions always will arise when such testimony will be desired. It is sought

from him, according to Mr. Chief Justice Shaw, "because his professional pursuits, his peculiar skill and knowledge in some department of science, not common to men in general, enables him to draw an inference, where men of common experience, after all the facts proved, would be left in doubt."

Why do the apparent discrepancies of testimony occur which foster the misconceptions concerning the medical expert witness with which we are so familiar? The answer is to be found in the codes of proceedings of the courts, in certain laws of the state which make for injustice, in the license which the courts place in the hands of the examining counsel, and the limitations to which the witness is confined, and not in the honesty or knowledge of the expert.

Of all the devices created by the law, which make for the subversion of justice, the hypothetical question stands among the preëminent. Give a skillful lawyer the privilege of asking questions, real or hypothetical, to be answered by "yes" or "no," and he can frame them in such a way as to put the answer in the witness' mouth; the lawyer who cannot ask an hypothetical question in such a way as to get the answer he desires is not a clever lawyer. It is framed

so as to secure in one word the answer to a number of questions; and few medical experts ever answered such a question without a feeling of resentment at its unfairness, or at least a desire to qualify the answer by further explanations. The witness is required to give his opinion upon a great collection of supposed facts, but we do not know what his opinion would be if one of these supposed facts were withdrawn or were discovered not to be a fact. He is asked for the truth, and nothing but the truth, and then is not permitted to tell it.

Another unfortunate side to this question is that the expert witness is made to have a financial interest in one side of the case. A certain opinion is sought and it is to be paid for. No fair or generous man lives who has something to give, the giving of which costs him nothing, and who is to be well paid for it, but will tend unconsciously to give freely what is wanted. It is for this reason that the expert, no matter how honest he is, leans toward the side that employs him. This prejudice will exist until he is made to stand upon neutral ground. Neutral ground can only be secured by requiring the witness to testify as to the nature of the case, being retained by both or by neither side. The

court should desire the impartial truth, and in order to secure it the expert witness must be in a position to be as impartial as the judge.

It is, moreover, clearly unfair to ask from a medical man judgment upon a case without his having had an opportunity to examine the patient. Particularly is this so if another medical man, who is to testify "on the other side," has had such an opportunity. It is earnestly to be wished that lawyers might realize that in medicine there is no "other side." The truth is all there is.

If medical witnesses are summoned by the two sides, let them have a fair and equal opportunity to examine the patient together, and discuss the case as they would in a consultation, and it will be found pretty generally that they agree. Men who are really experts are all possessed of the best knowledge of their subject. Medicine as a science is not so very inexact. Let these men be called upon the witness stand. Let them not be handed over as automatons to the contending counsels to be bandied about; but, as men of intelligence and knowledge from whom the court desires the truth, let them be allowed to elucidate the question, and it will be found generally that they are of the same opin-

ion in the court room as they are in the examining room.

It is the trick of the lawyer to make the medical expert his tool. It is to the discredit of the courts that this is so. The lawyer's practice is to present one side of a case, the doctor's practice should be to deal squarely with the whole, and to subvert this practice means misunderstandings.

The hue and cry against the medical expert is virtually a reflection not upon him, but upon the practice of our courts and the laws which govern them, and which are responsible for the injustice which makes him one of its victims.

XVII

THE PRECEPTOR

I WISH that we might have restored to us in some way the old relation of preceptor and pupil. Personality is such a strong factor in teaching, it is a great loss to sacrifice it. Teaching is becoming a composite and complicated function—like much of our modern-day processes, it is gaining in efficient machinery but losing in inspiring personality. I would not say that students are not taught better now than ever before, nor would I say that shoes are not made better now than in the olden days; but the passing of the dear old cobbler, who was my neighbor, and who hoed in his garden after supper, has deprived me of just that much human kinship. The medical student needs to hear the living voice of the master.

It is of great value to a young man to have a *whole man* as his ideal. Let me explain: The student now divides his time equally among many teachers. He admires this one's diagnos-

tic acumen, that one's painstaking honesty, and the splendid therapeutic technic of another; but when all are done and he goes to work for himself his ideal, if he has any, is a composite, not a loved and respected individual; and a composite lacks bowels.

The broad field of medicine will never again be mastered by any single man. Students have long ago ceased to go to Leyden to study with Gaubius. The student now in his college work comes under the influence of a number of teachers, each excelling in his special branch. But it is possible for him when he enters into practice to enjoy the advantage of which the modern stress of the times has deprived him. Then if he can, as an assistant or an associate, become attached to some practitioner, whom time and experience have made both wise and venerable, he is, indeed, a fortunate youth. This is one of the reasons why the doctor's son enjoys an especial advantage; he has a preceptor whom he respects and who loves him. We can best have ideals by seeing them in reality.

XVIII

THE GENERAL PRACTITIONER AND THE CLINICAL ASSISTANT

THE time was when the practitioner of medicine worked independently and alone, jealous of his own knowledge and skill. The modern practitioner does not harbor this jealousy, but lives and works in an atmosphere of coöperation. The principles of reciprocity are to be still further amplified among practitioners of medicine. No better fortune can come to the young man, even though he has just finished an interneship, than to begin his practice in close association with a well-educated physician with a good-sized clientele. The younger man should be his senior's assistant. His value will be in the finer methods of clinical diagnosis. He also can give his attention to looking up the literature of cases which are being studied and to the investigation of the newest methods of treatment.

The equipment necessary for applying the modern methods of clinical diagnosis is neither

formidable nor out of the reach of the general practitioner. It does not require a complicated laboratory, although a laboratory is desirable. A table for a microscope and its appurtenances is necessary. If there are no rooms adjacent to the consulting room, a small incubating oven may be set up in the kitchen. The apparatuses for blood counting and for determining blood pressure should be added to the clinical thermometer and the stethoscope. The important examinations to be made are of the sputum, the urine, stomach contents, feces, the blood, and bacteriological tests of mucous-membrane discharges. The young men who are now being sent out to practice medicine have been taught these things, and they should practice them. The best conditions of general practice are served when the busy practitioner associates with him such a man. Their mutual interests will be helped. It is universally true, other things being equal, that, the better work a physician does, the better are his emoluments.

We must return, in a measure, to the old system of preceptor and pupil; the latter, however, being a licensed and scientific physician who gives as much as he receives. He should give his services as an assistant in the lines above

referred to. He also may be called upon to do some of the night work, to do dressings, administer anæsthetics, and in many other ways to lighten the burdens of the senior, and in so doing help out his own income and lay the foundation for his future work. The latter can contribute the lessons which experience has taught. He can give his assistant—or, preferably, associate—the benefit of that combination of knowledge, skill, tact, and judgment which the schools cannot teach, and which can only be developed by time, and well-guided experience; it is the atmosphere that surrounds the ideal physician. He can turn over to his associate cases which he prefers not to treat.

The same younger man may be associated with two or more physicians if one has not sufficient work to keep him busy. As the younger man becomes more and more engaged with general practice he will give less time to the laboratory, but it is surprising how habits of accuracy in diagnosis cling to a man who has once practiced them. It is also surprising how difficult it is for a man, who starts in practice "by the rule of thumb," to get away from his careless habits. About the worst thing that can happen to a young man is to enter immediately into a

large and driving general practice before he has had a chance to get himself squarely oriented with regard to general medical work. The best results are to be secured by gradually growing out of the clinical laboratory and the deliberate and leisurely study of cases into general practice.

XIX

WORK AND PLAY

LET it be laid down as a rule of life that a man should not be addicted too much to any one thing. The wisdom of a wholesome variety and the mixing of play with work should drive the busy man afield in certain seasons of the year in search of change and recreation. To none do these observations apply more than to the dweller in the city, and to no dweller in the city more than to the doctor of medicine. He lives and works in an atmosphere of stress, and he cannot help himself being influenced by it. He is surrounded by the rush for gain and power, which he cannot help from entering into his blood. About him is the strenuous business life,

> Where with like haste, thro' diff'rent ways they run,
> Some to undo, and some to be undone.

The city life is an unnatural life. It lacks the recreation to be found in manual toil. The

surgeon uses his hands, to be sure, but his work is associated with so much personal responsibility and nervous strain that the real hygienic advantage to the worker is neutralized. The average city business or professional man, if he is wise and fortunate for a season turns his back upon this scene of artificial life, and seeks the places which men have not defiled. Let him go where he will look up to the blue sky—I shall not say *can*, for he can look up to it in town if he only would—and let him roam the fields or woods or sea; and he will be a better doctor for it, and his patients will receive better advice when he returns.

There are many diversions which are helpful to the practice of medicine—riding, driving, walking, the outdoor games, and working with the hands. They are all there, waiting for the man who will let them take hold of him and help him. As to fishing, the best way to fish is, Tityruslike, to lie beneath the shadow of the branches of a widespreading beech, and read the "Complete Angler." Walking has much to recommend it. It is an ancient pastime. Among our primitive ancestors it was cultivated as the most approved means of travel. To those of the equipage and the motor car, I

commend it. Take with you the society in which, of all the world, you find the greatest joy, and walk the fields, breathe deeply, inhale the breath of flowers, behold the pictures nature has made, listen to the songs of birds; and when you return to work you will radiate joy just in the proportion that you have absorbed it out of the great world of beauty in which you have sojourned.

The country practitioner leads a more rounded life. He is less apt to be addicted too much to any one thing. He has his wholesome diversions. Some of these diversions his city brother, by taste and education, or want of education, would not undertake; but they will lengthen his days. Let the man who puts out his own horse and trims his hedge after the day's work is done not envy him who drops into the great upholstered chair at the club around the corner from his office and fills the circumambient air with rings of fragrant smoke at the close of the day. The city has always been the destroyer of men and of families. *Urbs edax rerum.* No city would long endure were it not replenished with brawn and brains from the fields and mountains.

Still, the country practitioner would profit

much by certain relaxations which he too rarely takes. He needs the inspiration of the contact with his fellows. He needs the meetings of his medical societies more than his city brother does. At such meetings he exchanges ideas with men of larger experience and wider observation than he. He needs to have his faith in certain things corroborated and his doubts in others confirmed. The pleasure in his work can be much increased by finding the ideas which he has gained from one case agreeing with the experiences in a hundred others. What has been in his mind as an unsettled theory becomes a solid working fact through the results of others' observations; and he goes back to his work with new inspirations and a firmer hold upon the essentials of his art.

As the practice of medicine goes, most practitioners devote themselves so assiduously and self-sacrificingly to their work that some form of sporadic relaxation does good and helps their minds and bodies; and in many cases it becomes a necessity. Properly viewed, this is true, unfortunately. The necessity for a vacation is an acknowledgment that something is wrong; and as a matter of fact something is wrong. Few men are doing their work under

the best conditions. This is true because there are few men who do not need a vacation, or who are not benefited by one.

There is a Sabbatic tradition that has come down to us from remote times. This tradition has become a part of our religion and entered into the laws of the state. But it is not well founded. It is unnatural that a man should conduct himself for six days in such a manner that at the end of that time he needs a day's rest from his doings of the other six. Still, most of us do. How much better it would be if we might live so that on Tuesday morning we should begin work as much refreshed as on Monday, and Saturday should find us as ready for labor and play as Wednesday had, and that our services and thoughts might be as holy on each day of the seven as we could make them. This would be the equable life, which we have not yet learned to live.

The average professional and business man must have his summer vacation; he shortens his life without it. Essentially, it is not the summer vacation that is so good, it is the preceding months of work that are so bad. He has violated the laws of health: the vacation is the therapy; he takes it as a cure to save his life.

Better that he should not need the cure; prophylaxis is the thing.

Let us hope that we may attain to that state in which work and play and prayer and meditation shall be so harmoniously combined and progress together so smoothly and naturally that a surcease from our method of life need never be a necessity. Then shall each day of the seven have its Sabbath hours, each day of the summer and winter, too, its portion of vacation; and so in all the days and seasons of the year, the stream of life shall flow smoothly on toward the great sea of eternity.

And, furthermore, let it be provided always that no useful man shall envy the man who has a great stock of health and nothing more.

XX

A WELL-ORDERED LIFE

WHEN a man is found who orders his life pretty close to the ideal it is well to take cognizance of him. I know a man, a practitioner of medicine, young and strong at sixty-two, who lives the normal life—at least as nearly as it is possible for a practitioner of medicine to live it surrounded by a community of violators of the code of nature's ethics. He sees as many patients each day as time will permit, giving each one as much attention as though he were the only case he had. He saves time by choosing his friends among the most congenial, not among his patients. He never makes a companion of a patient for policy's sake. He "sits around" neither in the sick room nor in the drug store. He prefers not to be called where he is expected to entertain the family or consult with the grandmothers. He chooses his companions among the well. He is one of the best-posted men that

I know; and his judgment and learning make him sought by many a colleague who desires to get at the heart of a case. His library is well stocked with the best current medical literature and books of reference. Usually he has a young practitioner associated with him. In a small laboratory connected with his office the finer details of diagnosis receive attention. He has the newest apparatuses of accuracy, but whenever possible he prefers to depend upon the old and tried blunt methods. He can hear almost as much with his naked ear as with the stethoscope. Still he keeps his associate pretty busy making microscopic examinations.

This man received much of his early medical education under the masters of Europe thirty-five years ago, yet he attempts no specialty; even minor surgery he delegates to some one else. He keeps well posted upon the advances in the specialties, and *knows what they can do for his patients.* He sees a comparatively large number of patients each day, and possesses a wonderful store of formulated knowledge based on experience. He is a regular attendant at his medical societies, where his discussions are always models of clearness and scientific thought. He thoroughly enjoys his work, and still finds

as much pleasure in getting at a diagnosis as he ever did in his student days. He still regards himself in every sense a student.

So much for this man at work: he is not so very different from many of our high-class practitioners; but at play he is, for I know no man who brings such a happy philosophy into all the hours of the day. He is one of the sweetest, most courteous, and fragrant characters; and in every sense a gentleman. Above all, he is original. He insists that his family, and even himself, are a part of the community which is entitled to his best thought and attention, as well as the sick. The sick summon him because they regard him as the best doctor to get them well; but his own call him because they love him. For certain hours during the day this good man devotes himself to the well. I know that he himself practically prepared one of his sons and a daughter for college; and they all thought it was play. At the present time he has a class in biology and natural history, and the two oldest pupils are himself and his grandson, aged eight. I met them coming in from the suburbs one morning before breakfast with a can of tadpoles and half a dozen frogs in an old medicine bag. I do not know

where he got them, but he said that he was taking them to his Sunday school.

He loves his children and grandchildren. He recognizes children as our best teachers. The responsibilities which they bring make us better. They teach us self-denial and consideration for others. He says that children are the real missionaries that are redeeming the world.

He is one of the boys with the boys. I saw him once with three grandchildren on his back, playing in the very middle of the day, and his wife threatened with apoplexy from laughter; and I happened to know that at that time there were four people trying to find him. When he is not in his office his servants know that he is not in; and when he is occupied with his family he is just as occupied as though he were with the sick. He recognizes his duty to them and to himself, and he claims that it makes him a better doctor. By doing well by the well he is better able to do so by the sick. He has a garden full of flowers, a house full of happiness, and a heart full of love for all the things in nature. The curious part of it is that each day in the seven is the same, and he has never taken a vacation because he needed it.

The work of this good man is among all

classes of people—from the very rich to the very poor. To whomever he goes he gives his best thought, and faithful and conscientious service, whether paid in money or in some better currency. He is loved by all of these, and respected and honored by his profession. Gradually an undesirable class of patients has become estranged from him—those who want to take medicine—for he is one of the few men in his community who often see a case through an illness without resorting to the drug store at all. Sometimes his advice to patients displays so sharp an insight into their characters and habits that they seek some other adviser who will be more impersonal. This, together with his disinclination to spend time over the trivialities with unprofitable people, has kept his practice down to a comfortable working basis. Most of the men who were his contemporaries in early practice have passed away, and during their last few years many of them were inefficient from overwork. This man is a better doctor to-day than he ever was. He is like an oak which buffets the storms and basks in the sun, and is the same from day to day. He has no ups and downs, because he is always up. In the community he is a public-spirited

citizen, taking an active share in politics and devoting much time to educational work. He is a member of the local school board, and has been instrumental in the inauguration of school methods that have attracted wide attention.

Now for the strangest thing of all. The one class of people who profess love and charity shrug their shoulders when asked about this man, and many have no good word for him, except that they hear he is a good doctor. Good doctor, forsooth! What better can be said of any man? He is, indeed, a good doctor; his rewards he reaps each day; and he is paving a path to immortality strewn with flowers of sweetest perfume and echoing with the music of the voices of children.

XXI

THE PHYSICIAN IN POLITICS

EVERY physician has been advised to keep out of politics. This advice cannot be escaped. The Commencement-day orator delivers it to the graduating class, the old physician cautions the young man against "mixing in politics," the literature of medicine perpetuates the admonition, and medical circles have a perennial sneer for the "political doctor." It is to be wished that there might be less of this sentiment. It is neither fair to the state nor to the medical profession: it deprives the former of the interest of one of its best class of citizens, and the latter of the advantages of availing itself of the opportunities of self-government. To advise any class of citizens to abstain from politics is to advise self-disfranchisement.

Politics is the science and practice of government. It is "clean" or "dirty," as the peo-

ple who participate are clean or dirty. No class-day orators are advising the dive-keeper or the man who preys upon the lives and property of the people to keep out of politics; as a matter of fact he is thoroughly in it, and has more legislation influenced in his interest, and places more of his friends in office in one year than the medical profession does in ten years. This is partly due to class-day oratory, and to the superior attitude and aloofness of our profession.

The science of medicine has brought about as far as it can the solution of the tuberculosis problem and the typhoid fever problem and a host of other similar problems which are as vital to the people as are the lives of their children. Medicine has shown how these diseases may be exterminated. Now these matters are up to the state. That means their further development is in the hands of politics. And shall our profession, after having hunted down the monster of typhoid, and gotten it at bay in its lair, cowed and at our mercy, desist from giving the *coup de grâce* because the stroke must be applied with the lance of politics? We need more doctors in our legislative chambers and in our executive offices. Medicine has long ago

grown past the function of administering to those who perchance have fallen sick. It has become the most salutary field of activity in the commonwealth, and we are not raising up men fast enough to administer its offices. We may justly be accused of slothfulness in our duty to the people.

There are a large number of cities in this country in which the best-administered office is the department of health under medical supervision, but in many municipalities this important department is handicapped by an absence of medical influence in the bodies to which it is answerable. In legislative matters the medical man can be counted on to be on the right side of the great questions concerning the health of the people, and he is the only legislator of whom this can be said. We strive for wise medical laws, we are confronted by the urgent need of a national department of health, but in order to secure these benefits for the people we have to appear as suppliants before the legislative bodies, which are often without sympathy or appreciation of the meaning of these things. The few physicians in these bodies are of great help. But the United States Congress, made up of 476 members, contains only four physicians; that

is, one physician to represent every 22,000,000 of inhabitants, including 130,000 educated physicians.

In the minor municipal offices we find physicians. Usually these men are selected by the civil-service system. They represent a high grade of culture in the municipal service, and the city is fortunate in having them. The number of offices which can be filled only by medical men is constantly increasing and will continue to increase. Medicine is destined to play a rôle in politics which it is not difficult to foresee, and it behooves us to prepare for it, and not hold aloof from the duties and opportunities which the future has in store.

If the medical man can afford to give some of his time or substance to charity or philanthropy, as all physicians do, he can employ his energies in no better channel than in labor for the common good, for social and civic betterment, through the agency of politics. Government is not in the hands of the people—it is in the hands of the people who take it into their hands. In Germany, France, and England, physicians take a prominent part in political matters and in the general interests of the community. In the early period of this country

medical men were active in the affairs of government. We may name with pride Benjamin Rush, Josiah Barttall, Oliver Wolcott, Lyman Hall, Matthew Thornton, Edward Hand, William Irvine, Jonathan Arnold, Cadwallader Colden, John Brooks, William Eustis, Nathaniel Freeman, Joseph Warren, and Hugh Mercer—physicians who made their impression upon the politics of their time. Among the finest features of the history of medicine in this country are the signatures of the doctors of medicine to the Declaration of Independence. Of them we should be proud. Political doctors, they!

XXII

KNOWLEDGE VERSUS MANNERS

THERE is no substitute for knowledge. There is no imitation knowledge. Knowledge is either the real thing or it is not knowledge.

I should like to see this proposition impressed upon every student early in his career. Commencement addresses are prone to exalt the manners of the physician. Cultivate an elegant, hopeful and gracious sick-room manner, it will do more than all your medical knowledge, they say. Maybe it will; but if that is the case, the patient does not need a doctor.

I have heard this so often and seen so much of the pernicious effects of this teaching that I am convinced that a voice should be raised in the defense of sick-room knowledge against sick-room manners. There are two things which the doctor should take with him to the sick room: the spirit of the scientist and the spirit of the gentleman, relatively important in

the order named. The art of medicine is a combination of these two. If a man is truly imbued with the former, the latter follows as a necessary result. A man may be a successful engineer or electrician and not a gentleman; but the medical man touches human life too closely not to be a gentleman if he is to be successful. The physician who applies his science to the best purpose, to the end of curing his patient, cannot deport himself in any manner derogatory to the interests of his patient. It is not a scientific application of medicine for the physician to be brusque and unmannerly in the presence of a sensitive sick person whom he essays to help. The scientific spirit in therapeutics, knowledge of the effects of external influences upon the disease, is what the physician should take with him into the chamber of the sick. These are the essentials.

I have endeavored to define the essentials of our art, as contrasted with the outward graces which certain practitioners exalt above them. Happily among regular practitioners the cultivation of the manner is rarely at the expense of the essentials, but among certain physicians it is carried, unfortunately, to an extreme degree. The clanking, silver-trimmed harness, or the

limousine, the rose in the button-hole, diamonds, the patent-leather ties, the elegant and imposing manner in the sick room, with the well-turned and flattering allusions, may be all delightful and helpful and good, but pity the patient if they be at the expense of the scientific medical essentials if the patient be really sick. The man who would refrain from listening to a patient's chest sounds because it cannot be done in a dignified way, or who is thinking of his own manners when he should be thinking of the patient, has no place in medicine.

Many a young man, after admonitions on manners from some wise head, is prompted to have his trousers pressed, invest in an orchid, and cultivate a pink-tea smirk to carry with him into the sick room; when it would be better for his patient did he but render his trousers baggy with his knees under his microscope, and wear upon his face into the sick room the simple expression of intelligent interest and hope born of knowledge and confidence.

Much is said of the physician inspiring confidence. To a certain degree it is a good thing. It is not necessarily the badge of the competent doctor, but it is the stock in trade of the charlatan. The latter is always full of confidence.

He assures his patient that he will cure him. His income depends upon inspiring confidence. He is the beau ideal confidence man. The physician who inspires confidence usually inspires it because his patient is a strong man or is not profoundly sick. But after all, the best confidence in the sick room is the confidence in the ability of the doctor, in his interest in the case, and in the belief that he will do all that he can for the patient.

"There," said the doctor, as he flicked the powder upon the patient's tongue. It was the "there" that did the patient more good than the powder, was it? So much the worse for the powder, so much the better for the patient; the powder was not much good or the patient was not much sick, one or the other or both. This matter of manners is exalted because most patients would get along pretty well without medical attention, and the beneficent manners of which we hear so much would become any one better than they do the doctor. It is because his work is to so large an extent among those who do not need him for his medical attainments that the notion has become current. Its positive harm comes when habit has prompted him to cultivate manners and when he permits

them to interfere with the essentials in a case which needs the best his brains and his science can give. Then we realize the meaning of the true doctor. Then we appreciate the man who has piled up as much knowledge as he can, who brings it to the bedside, who applies the scrutiny of the well-trained mind, who goes at his case with method, whose aim is first to discover the nature of the disease and then apply the treatment with recovery as the goal, and who adds to these qualities the simple attributes of an honest and gentle man.

XXIII

MEDICAL LIBRARIES

A MEDICAL community with a medical society is invariably progressive; but if it adds to this a good medical library, it adds to its progressiveness stability.

A hospital, a laboratory or a society is often the nucleus of interest about which a medical community gathers, but none of these can appeal so strongly to the largest number of the substantial element of the profession as does a medical library. One of the reasons for this is that a medical library is not possible in a community which is not sufficiently advanced to have a successful medical society. The hospital and the laboratory in a given community do not offer like opportunities to all, and the voice in their management and work comes from but a few.

A society is influenced by the indescribable "spirit of the hive" or by some dominant character, and its interests rise and fall, unless it be

a great organization or has property interests or vested rights affecting its members. But a medical library in which all members have a right and which depends for its existence upon the interest of all, when once established and appreciated, becomes a center of common sympathy and the strongest of bonds for holding a medical organization in harmony.

A society with such a library possesses cohesive power. Men who are advanced enough to maintain a society will often rally about the interests of a library when but passive in other things. They may have their differences in the hospital and in the society, but they will be found united for the library. Such a library becomes their pride. They know its worth. Their common interests crystallize about it. It diffuses through the whole society high ideals, a respect for that which is scholarly and worthy of reverence, and a love for the noble traditions of their profession.

As a library develops and grows it should add in the order named the following classes of literature: First, the current periodicals; second, the newer books; third, the completed sets of periodicals and reports; and fourth, the older works—the writings of the fathers—in which

glimmer the beginnings of the art and science of medicine. Every medical community should have a library begun and developed on these lines.

It would be possible for every county society or other county organization, to which all physicians are eligible, to have its medical library. In sparsely settled counties the library-supporting organization might be geographically larger. Physicians are learning the value of community of interests. There is no need of five doctors in a single village all having a complete set of the same reference work when none of them has some other thing which is of just as much importance. It would be wiser if they pooled their interests; and then, with the same amount of money, they could have five different things instead of one. The next step is short: it is the establishment of a central place where these things shall be available to all. When that step is taken the development of a library with its beneficent influence is begun. A little attention keeps it alive, and the forces of nature feed it.

It only requires a word, here and there, to turn into it the library of a deceased physician, which otherwise would be dissipated and

ultimately find its way to the junk shop. A little coöperation with a neighboring library exchanges duplicates for things needed. The American Association of Medical Librarians conducts a clearing house for just this purpose. Time is the all-important factor in the growth of a library. A library which is kept sound is as sure to grow as an oak sapling. It is hard to stop it. One of the greatest libraries in this country, that of the College of Physicians of Philadelphia, organized when Philadelphia was a village, can be pointed to as a product of time. For nearly two centuries medical books have gravitated to it, until now it is a veritable treasure-house of medical literature. Time does it. The community which contemplates organizing a library is squandering its best capital in delay.

The important factor in the beginning of such an undertaking is that every available person shall have an interest and shall contribute something. A library in a small community to which everybody contributes two dollars a year is worth twice as much as one in which the same total sum is contributed by one or a few individuals. "Our Library" is the talisman of success.

It is to be hoped that the smaller cities and

rural districts will establish libraries among which the spirit of coöperation may move, until the country is dotted with these storehouses of medical learning, and each community becomes a permanent custodian of the literature of medicine.

XXIV

THE HISTORY OF MEDICINE

THAT doctor is best qualified to practice his profession in whom, other things being equal, is found a knowledge of the history of his art. There is no better inspiration to good work than the study of the lives of the pioneers of medicine who labored on to success and whose names live in the annals of our science. There is no better help for avoiding the pitfalls of error than an appreciation of the struggle of scientific medicine against the obstacles of mysticism, superstition, charlatanism, and credulity. The physician who is not familiar with the history of medicine labors under a decided disadvantage. How much we hear and how much we read that would not have been uttered but for a deficiency in this knowledge! The medical man who is learned in medical history knows the origin of many modern pseudo-medical sects, and he knows their fate, and is best qualified to discover the good in them.

Our own country is so young that we have not yet awakened to an appreciation of the importance of medical history. Still, we are old enough to have made some history of our own with which every medical man should be familiar. In Europe more attention is given to this subject. It is taught in the universities and a large amount of literature has accumulated. In the United States there are but few medical schools which give their students even an inkling that medicine has a history. Much honor is due to the pioneer institutions with high enough ideals to give lectures or instruction in this field.

Especially noteworthy are the medical historical societies. In such organizations we may be sure to find men who represent the best medical culture of their communities. American medical literature may take pride in the fact that the first periodical devoted to medical history was established in this country.[1] Another of the advances which mark an epoch in medical culture is the action taken by the University of London in 1905 requiring an examination in the history of medicine as essential for the de-

[1] The *Medical Library and Historical Journal* (now the *Æsculapian*), instituted in 1903.

gree of Doctor of Medicine. These are all signs of the times pointing to the cultural growth of medical knowledge.

"The foundation stones of the whole modern structure of human wisdom have all been laid by the architects of yesterday. Thrice wise is he who knows the quarries and builders of bygone ages and is able to differentiate the stones which have been rejected from those which have been utilized."

XXV

THE SMALL MEDICAL SOCIETY

"I hold every man a debtor to his profession;
He should be a help and ornament thereto."—BACON.

SOME of the best inspiration that medical men have ever received has come from the little coteries of brother practitioners who make up a medical society. The large societies serve their purpose and are necessary, but the small societies, made up of the select few, often supply inspiration for the members which could be created in no other way. The element of mutual admiration, engendered by compactness of organization, is the important thing. As a matter of fact no man really does good work unless he belongs to a mutual admiration society of some kind; it may have only two members; but the best work we do is done for the approval of some one else.

The small size of a medical society is no reproach. If it has sufficient compactness, that is closeness and harmony, its good cannot be meas-

ured by its size. The fact of the existence of a small society implies that it is successful. Its members are so close that if there is lack of sympathy or profit from its meetings it falls apart and is no more. All small societies are good societies. To designate such with the appellation of "mutual admiration society," is a high compliment to its members. If our great societies were tinctured more with mutual admiration it would be good. One of the best spirits that can come among medical men is that of mutual admiration, and the little societies often contain it to an admirable degree.

XXVI

DOCTORS' SONS

DOCTORS' sons pretty generally make good doctors; that is, if they decide to study medicine and be doctors at all, they succeed. When you hear a physician say that the practice of medicine is a dog's life, and that if he had it to do over again he would never study medicine, that patients are ungrateful and give him little thanks or pay, you may be pretty sure that his son will not study medicine; and if perchance he should, he is terribly handicapped by a lot of bad medical traditions. The unsuccessful doctor does not let his son study medicine. The doctor's son who does study medicine is quite invariably the son of the man who was successful enough to find joy in his work, and who could wish his son nothing better than to enter into the calling which had meant so much to him. And the boy sees in his father's life something that excites his admiration to emulate and covet. As a matter of fact

and observation the son of the really successful doctor commonly does study medicine; and I could name a number of such men who attained to even greater success than their fathers.

However, the decision as to whether a man is successful or not does not rest with you or me —the decision is with him—he is the only one who knows.

XXVII

TUBERCULOSIS PREVENTABLE

IF tuberculosis is preventable, why then is it not prevented? Are not the thousands who are to perish during the coming year worth the saving? If we knew that we should be among the number, should we not think it a terrible thing? If the treatment is simply hygiene, is it not strange that we are not willing to live hygienically until *after* we have contracted the disease? If 200,000 people die annually of tuberculosis in the United States, and an equal number are annually cured of the disease by sleeping and living in the open air, why would it not have been better for them to have slept and lived in the open air before they were sick, instead of after they were sick, and thus have avoided the disease? If sleeping and living in the open air is good for the sick why is it not good also for the well? Is it not better to stay well than to be cured of tuberculosis?

XXVIII

MEDIEVAL HISTORY

IT is said by some medical historians that we must remember that what little Western learning survived through the dark ages was stored and guarded in monastic vaults and clerical libraries—wealth unrevealed and unknown even to the custodians, but still in some fashion preserved for the enlightenment of wiser generations—as though this were to the credit of the Church. It made a waste of Europe, and out of the fertilizing piles of decomposing humanity grew its resplendent flowers—the mighty edifices, which have astonished the world. It suppressed natural scientific truth, for natural science was contrary to its doctrines. If anything was permitted to survive, it was because it was emasculated of such truths as refuted its dogmas; and for this reason we have had preserved for us much silly rubbish, while oblivion has been the fate of much of the real learning of that unhappy period, when the Church was dominant.

XXIX

SOCIETIES

IT is good for men with common aims and interests to unite for their mutual improvement. The worker in any field of science who has not society affiliation is handicapped by the want of it. Sympathy, coöperation and help are what everyone needs, and to deprive one's self of them is not independence but lack of wisdom. A medical community in which the members are united in a good society, in the success of which they take pride, is more progressive than the community in which each one is pulling alone.

The doctor who needs the help and sympathy of his fellows requires a medical society; and the independent worker, whose originality and success make him independent, owes it to his fellows to affiliate himself with them; and each will find that there is something for him to give and something for him to receive.

XXX

JUBILEE MEMBERSHIP

THE British medical societies have a happy custom of celebrating what they call "Jubilee Membership." When one has been a member of a society for fifty years, some further cognizance is taken of this fiftieth anniversary than simply sending him a bill for his annual dues as had been done on forty-nine previous occasions. Fifty years is a long time for a man to have served his profession and the public; and our British brethren observe this by pausing for a few moments in their scientific work while the president of the society presents a resolution congratulating the member upon the attainment of his "jubilee membership." This resolution embodies congratulations, a brief *résumé* of the member's professional services, and expressions of hope that he may long be spared to the society in the intellectual enjoyments of a ripe age. Such attentions as this make for kindness, and sweeten the atmosphere through which we all must walk.

XXXI

MEDICAL PRACTICE IN UTOPIA

MEDICINE is the most important of all, and yet, because of its inaccuracies, it has never taken its well deserved place among the sciences. Medicine is the most beneficent of all, and yet, because its votaries must secure their livelihood by its practice, it has never taken its well deserved place among the philanthropies. Some day it will, but there is to be much education for both doctor and public before these conditions may be realized.

Medical practice in Utopia is different. Here it is untrammeled by the necessities of the dollar. Here the doctor perfects himself in his science and art, and, with the spirit of true philanthropy, advises his patient just what is best for him, nothing more nothing less; that is the only consideration; and his reward is measured by the conscientious devotion, intelligence, and skill which he puts into the task. We have some eminent practitioners in Utopia, but many more are needed.

XXXII

THE PRESENT DAY

SOME practitioners of medicine labor unceasingly with little diversion in their work, looking forward to the time when they shall slacken their pace and enjoy surcease from toil. They forget that the present only is surely ours, that the past has gone, and the future may never come. He lives most wisely who lives the equable life, and finds his joys as he lives each day. Let us not build a great mansion to occupy when we are too worn out to enjoy it; but instead, shall we not do more wisely to abide awhile each day in the little wayside cottage of contentment, where the morning glories creep over the doorway, and the birds sing, and children play merrily beneath the boughs?

XXXIII

THE BORDERLAND OF TRUTH

IT is interesting to observe that in many of the diseases in which scientific investigation has shown a positive relation between certain causes and effects, the discovery was preceded for a long time by a general but unconfirmed surmise that such a relation existed. There is no belief or superstition but has some foundation for its existence, and many of our most important discoveries have been made by following crude surmises.

XXXIV

THE PHYSICIAN'S CALLING

IF there is any joy which man should prize, it is the joy of relieving distress. There is but one greater, and that is the joy of preventing distress. The life of the physician is spent in the midst of both of these, and he should be the most blessed of men.

XXXV

THE FUTURE OF MEDICINE

IT requires no extraordinary insight to peer into the future and behold the position of exalted importance which medicine is destined to occupy. None of the avocations of men shall be more honored. Its administrations shall be more kind and its results more beneficent than philanthropy itself. It shall stand between the living and the dead, and men shall call its mission holy.

THE END

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